REPORT DOCUMENTATION PAGE

Form Approved
OMB No. 0704-0188

1. AGENCY USE ONLY *(Leave blank)*	2. REPORT DATE	3. REPORT TYPE AND DATES COVERED
	11/30/98	Quarterly Status, 9/1/98-11/30/98

4. TITLE AND SUBTITLE
Computational Models of Human Organizational Dynamics
Quarterly Status Report #7

5. FUNDING NUMBERS
A2

6. AUTHOR(S)
Dr. Gregg Courand, Dr. Michael Fehling

7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES)
Synergia LLC
2400 Broadway, Suite 203
Redwood City, CA 94063

8. PERFORMING ORGANIZATION REPORT NUMBER
COD-7

9. SPONSORING / MONITORING AGENCY NAME(S) AND ADDRESS(ES)
DARPA/ISO
3701 N. Fairfax Drive
Arlington, VA 22203-1714

10. SPONSORING / MONITORING AGENCY REPORT NUMBER

11. SUPPLEMENTARY NOTES

12a. DISTRIBUTION / AVAILABILITY STATEMENT
Approved for public release;
distribution is unlimited.

12b. DISTRIBUTION CODE
A

13. ABSTRACT *(Maximum 200 words)*

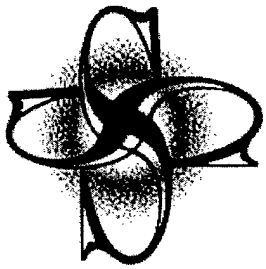
14. SUBJECT TERMS
Organizational Dynamics,
Organizational Modeling, Organizational Analysis

15. NUMBER OF PAGES
3

16. PRICE CODE

17. SECURITY CLASSIFICATION OF REPORT	18. SECURITY CLASSIFICATION OF THIS PAGE	19. SECURITY CLASSIFICATION OF ABSTRACT	20. LIMITATION OF ABSTRACT
Unclassified	Unclassified	Unclassified	UL

Synergia LLC
2400 Broadway, Suite 203
Redwood City, CA 94063-1551
Phone: (650) 569-4999
Fax: (650) 569-4990
World Wide Web: www.synergia.com



Computational Models of Human Organization Dynamics

Quarterly Report #7

Sponsored by
Defense Advanced Research Projects Agency
Information Systems Office
Computational Models of Human Organization Dynamics
ARPA Order No. E495
Program Code No. 6S10
Issued by DARPA/CMO under Contract #MDA972-97-C-0001

Period Covered: 9/1/98 – 11/30/98

Reporting Period

This is the seventh quarterly report for the project: Computational Models of Human Organization Dynamics. This report covers the period from 9/1/98 through 11/30/98.
Progress During Reporting Period

During this quarter we have elaborated our architecture for actors and we have created our first design for a group work environment to support collaborative creation of organizational models.

We call the actor architecture the Ambiguity Reduction Architecture. It is based on the view that actors are bundles of practices (i.e., adaptive skills) and that the task that organizes cognition by determining 'what to do next' is the reduction of ambiguity. Ambiguity arises for actors whenever they have no solution, multiple solutions yet need one, or conflicting solutions about which practices to execute in the current situation. Ambiguity reduction is encoded in a collection of skills (i.e., just more practices) that have special access to and control over the actor's agenda. This architecture can be contrasted with SOAR in that it makes no necessary prior commitment to the types of ambiguities that might arise; in contrast, SOAR's architecture requires a prior specification of all possible problem spaces that may require consideration.

In our last report we remarked that most real human planning activity, as well as intelligence analysis and decision-making, are conducted by multiple individuals. Further, we have learned in our initial use of our technologies – mapping (data collection and encoding), modeling (construct computational realizations of practices, and analysis (experiment design, results analysis and visualization) – that the most likely and effective use of our technology will be by groups or even entire organizations. During this period we have taken some preliminary steps to define a suitable architecture.

In previous work for DARPA we designed an architecture, called the Problem Solving Support System, or PS3, for distributed concurrent development of crisis response plans by automated planners. PS3 included a distributed truth maintenance capability that we invented to help maintain coherence over plans and plan rationales.

We reviewed PS3 to determine whether it could be used to support distributed collaborative human plus automated planning. We have been able to generalize PS3's specification so that it now supports human collaborative organizational analysis. We have done so by defining special facilities for users to a) form critiques of their products and others', b) share products and critiques over a selectable scope of users, and c) maintain rationales for models that refer to external data, modeling choices, and modeling 'dialogues' in the form of multiple rounds of transactions that share critiques. We refer to the architecture as the Consensus Facilitation Architecture.

Plans for Next Quarter

In addition to the technologies we have developed, this project has produced specifications for three layers of human activity: individual and composite practices, actor architectures, and group work as a form of disciplined and specially supported dialogue. Our task next quarter is to develop a computational primitive that we can use to encode models of practices, actors, and eventually the CFA.

Equipment Purchases

There were no equipment purchases this quarter.

Personnel Matters

There have been no changes in the key personnel proposed for this project.

Meetings, Important Exchanges and Decisions

Dr. Larry Willis will be taking over as the contract technical monitor. We presented our technologies and described the Planning by Analysis methodology to Dr. Willis, at DARPA.

Problems

We have no problems to report at this time. We foresee no substantial risks to our ability to complete this project successfully, on time, and on budget.

Fiscal Status

The table below summarizes the fiscal status for this contract and our projected spending over the next quarters.

Amount Currently Provided	$749,647.
Expenditures and Commitments to Date	$598K
Manhours Planned, Actual	Planned = 650 Actual = 558
Estimated Funds/Qtr to Complete Work	$152K
Estimated Date of Completion	2/28/98

Distribution of this Report

The following individuals/organizations comprise the distribution list for quarterly reports on this contract.

DARPA/ISO
Attn: Mr. Larry Willis
3701 N. Fairfax Dr.
Arlington, VA 22203-1714

Defense Technical Information Center
Attn: OCC
8725 John J. Kingman Rd., Suite 0944
Ft. Belvoir, VA 22060-6218

DARPA/ISO
Attn: Janice Pritchard
3701 N. Fairfax Dr.
Arlington, VA 22203-1714