UNISYS

Library Capability Demonstration
Central Archive for Reusable Defense Software (CARDS)

Informal Technical Data

STARS-VC-B018/004/00
24 March 1994
INFORMAL TECHNICAL REPORT
For The
SOFTWARE TECHNOLOGY FOR ADAPTABLE, RELIABLE SYSTEMS
(STARS)

Library Capability Demonstration
Central Archive for Reusable Defense Software
(CARDS)

STARS-VC-B018/004/00
24 March 1994

Data Type: Informal Technical Data
Contract NO. F19628–93–C-0130
Line Item 0002AB

Prepared for:
Electronic Systems Center
Air Force Material Command, USAF
Hanscom AFB, MA 01731–2816

Prepared by:
Electronic Warfare Associates, Inc.
under contract to
Unisys Corporation
12010 Sunrise Valley Drive
Reston, VA 22091

Distribution Statement "A"
per Dod Directive 5230.24
Approved for public release, distribution is unlimited
Data Reference: STARS-VC-B018/004/00
INFORMAL TECHNICAL REPORT
Library Capability Demonstration
Central Archive for Reusable Defense Software
(CARDS)

Distribution Statement "A"
per DoD Directive 5230.24
Approved for public distribution. Distribution is unlimited

Copyright 1994, Unisys Corporation, Reston, Virginia and Electronic Warfare Associates, Inc.
Copyright is assigned to the U.S. Government, upon delivery thereto in accordance with the
DFARS Special Works Clause
Developed by: Electronic Warfare Associates, Inc.

This document, developed under the Software Technology for Adaptable, Reliable Systems
(STARS) program, is approved for release under Distribution "A" of the Scientific and Techni-
cal Information Program Classification Schema (DoD Directive 5230.24) unless otherwise
indicated by the U.S. Sponsored by the U.S. Advanced Research Projects Agency (ARPA) un-
der contract F19628-93-C-0130 the STARS program is supported by the military services with
the U.S. Air Force as the executive contracting agent. The information identified herein is sub-
ject to change. For further information, contact the authors at the following mailer address:
delivery@stars.reston.paramax.com

Permission to use, copy, modify, and comment on this document for purposes stated under
Distribution "A" and without fee is hereby granted, providing that this notice appears in each
whole or partial copy. This document retains Contractor indemnification to the Government
regarding copyrights pursuant to the above referenced STARS contract. The Government dis-
claims all responsibility against liability, including costs and expenses for violation of property
rights, or copyrights arising out of the creation or use of this document.

The contents of this document constitutes technical information developed for internal Govern-
ment use. The Government does not guarantee the accuracy of the contents and does not
sponsor the release to third parties whether engaged in performance of a Government contract
or subcontract or otherwise. The Government further disallows any liability for damages
incurred as the result of the dissemination of this information.

In addition, the Government (prime contractor or its subcontractor) disclaim all warranties with
regard to this document, including all implied warranties of merchantability and fitness, and in
no event shall the Government (prime contractor or its subcontractor) be liable for any special,
indirect, or consequential damages or any damages whatsoever resulting from the loss of use,
data, or profits, whether in action of the contract, negligence, or other tortious action, arising in
connection with the use or performance of this document.
Data Reference: STARS-VC-B018/004/00
INFORMAL TECHNICAL REPORT
Library Capability Demonstration
Central Archive for Reusable Defense Software
(CARDS)

Principal Author(s):

Daniel Nichols

Approvals:

System Architect: Kurt Wallnau

Program Manager: Lorraine Martin

(Signatures on File)
1. AGENCY USE ONLY (Leave blank) 2. REPORT DATE 24 March 1994 3. REPORT TYPE AND DATES COVERED Informal Technical Report

4. TITLE AND SUBTITLE Library Capability Demonstration (CARDS)

5. FUNDING NUMBERS F19628-93-C-0130

6. AUTHOR(S) Daniel Nichols

7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES) Unisys Corporation
12010 Sunrise Valley Drive
Reston, VA 22091

8. PERFORMING ORGANIZATION REPORT NUMBER STARS-VC-B018/004/00

9. SPONSORING/MONITORING AGENCY NAME(S) AND ADDRESS(ES) Department of the Air Force
Headquarters ESC
Hanscom, AFB, MA 01731-5000

10. SPONSORING/MONITORING AGENCY REPORT NUMBER B018

11. SUPPLEMENTARY NOTES

12a. DISTRIBUTION/AVAILABILITY STATEMENT Distribution "A"

12b. DISTRIBUTION CODE

13. ABSTRACT (Maximum 200 words)

Please see Abstract Page

14. SUBJECT TERMS

15. NUMBER OF PAGES 21

16. PRICE CODE

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

This is the fourth library capability demonstration under this contract. Each demonstration provides information about the Central Archive for Reusable Defense Software (CARDS) operational library capabilities.

The goals of this demonstration are to show how CARDS:

- Made the Command Center Library (CCL) model easier to navigate.
- Made the CCL model easier to conceptualize.
- Made the CCL model more maintainable.
- Improved the CCL performance in the Reuse Library Framework (RLF) Graphical Browser.
Table of Contents

1 OVERVIEW.........................................................................................................................1

Appendices

Appendix A  LIBRARY CAPABILITY DEMONSTRATION BRIEFING SLIDE......A - 1

Appendix B  LIBRARY CAPABILITY DEMONSTRATION SCRIPT.........................B - 1
1 OVERVIEW

This document provides the material used to demonstrate the Central Archive for Reusable Defense Software (CARDS) Program's operational library capabilities. The actual demonstration was given to the Air Force Program Manager on March 24, 1994 during the scheduled Program Management Review.

The goals of this demonstration are to show how CARDS:

- Made the Command Center Library (CCL) model easier to navigate.
- Made the CCL model easier to conceptualize.
- Made the CCL model more maintainable.
- Improved the CCL performance in the Reuse Library Framework (RLF) Graphical Browser (GB).

The demonstration was presented in two parts:

- A briefing (see Appendix A) of what was presented.
- The actual demonstration script (see Appendix B) to show current capabilities.
APPENDIX A - LIBRARY CAPABILITY DEMONSTRATION BRIEFING SLIDE

The following pages are the slides used to explain the library capability demonstration.
Central Archive for Reusable Defense Software (CARDS)

Library Capability Demonstration
CDRL: B018
STARS-VC-B018/004/00

24 March 1994

Dan Nichols
EWA, Inc.
Team Members

Brian Curfman, SBI
Karen Fleming, SBI
Cathy Harkins, Unisys
Paul Kogut, Unisys
Dan Nichols, EWA
Nancy Solderitsch, Unisys
Kurt Wallnau, Unisys
Roger Whitehead, DSD

24 March 1994
Goals

Make the Command Center Library (CCL) model easier to navigate;
Make the CCL model easier to conceptualize;
Improve the performance of the CCL in the RLF Graphical Browser; and
Make the CCL model more maintainable.
Design Objectives

Don't lose current information and capabilities;
Create a user-understandable view by keeping logically related information in one place;
Allow for growth; and
Allow for parallel development.
Approach

Discuss alternative approaches to partitioning based on our objectives.

Partition the model as follows:

- An Overview model:
  - An overview of the entire CCL model structure;
  - An architecture-centric view of the model; and
  - Links to the Requirements and component class models.

- A Requirements model:
  - DISA CCDH and TACE requirements and
  - Links to the component class models.

- Separate models for each component class:
  - All categories and objects referenced by the particular component class and
  - Some necessary context information.

Review the resulting models.
Current Status

Models for the Overview, Requirements and component class libraries;
Action to open new models from within the RLF Browser;
Launcher which allows direct access to all library models;
Capability to launch models from the PRISM Architecture picture; and
All previously existing capabilities with the exception of system composition.
Current Work and Next Steps

Address the style conventions identified during this activity;
Complete modeling for classes with qualified components:
  • Database Management Systems and
  • Word Processor.
Incorporate Ada “with” like mechanism to address shared model nodes;
Incorporate model manager mechanism;
Finish fixes for System Composition;
Current Work and Next Steps (continued)

Testing:
- Generate test plans for new model version and
- Begin testing of new model version.
Create a developmental version of distributed CCL for evaluation;
Demonstrate this implementation of the library at STC; and
Planning for an April/May release for Version 4.0 of the CCL.
Benefits Achieved

Models open significantly faster in RLF Graphical Browser;
Smaller, more understandable models;
Style conventions applied have made the model more consistent;
Already allowing for parallel development; and
Newer team members have gained a solid understanding of the CCL Model and modeling techniques.

24 March 1994
APPENDIX B - LIBRARY CAPABILITY DEMONSTRATION SCRIPT

The following contains the demonstrator's computer script used to demonstrate the CARDS library capabilities.

1. Highlights

A. New launcher

B. Action to open models

C. Hotspots in picture

D. Partitioned model

E. Component Qualification

2. Show new launcher and new launch model action

<activate launcher via Run.sh>

- To show new launcher allowing more direct access.
- RLF GB type representation.
- Ability to launch all models from within it.
- Ability to view descriptions.

<overview>.<View_Model>

3. Show hotspots in architecture

<cc_overview>

<Navigate>.<Go To a Child>.<Architecture>

<PRISM_Architecture>.<Display Relationships Graphically>

- Model of PRISM Architecture

<Quit>.<Delete Current View>

<PRISM_Architecture>.<Perform Action>.<Picture Image>
• Shows new hotspots capability.

• Will launch one of the models via the hotspot.

<Click on BRIEFING PREPARATION/PRESENTATION>

• Opens cc_briefing_system model

• Will talk about it later...

<cc_briefing_system>.<Quit>.<Quit Browser Session>

<PRISM Picture>.<File.Quit>

4. Show Requirements model

<Navigate View>.<Go To Root Node>

<cc_overview>.<Navigate>.<Go To A Child>.<requirements>

<requirements>.<Perform Action>.<Launch Model>

• Opens cc_requirements model.

• Will be showing a specific requirement and how to get to a component model from it.

<cc_requirements>.<Navigate>.<Go to a Child>.<requirement>

<requirement>.<Navigate>.<Go to a Child>.<DISA_CCDH_item>

<DISA_CCDH_item>.<Navigate>.<Go to a Child>.<function>


• scroll down to has_ops_intell_briefing

• scroll to right of view

<briefing_system>.<Perform Action>.<Launch Model>

• Ability to open model from requirements and architecture viewpoint.

• Was able to do the same from the picture.
5. Partitioned model

<bcc briefing system>

<bcc briefing system>.<Display Relationships Graphically>

6. System Composition

<bcc overview>

<Navigate View>.<Go To a Node>.<mapping system>

<mapping system>.<Perform Action>.<Launch Model>

<bcc_mapping_system>.<Navigate View>.<Go to a node>.<mapping_system>

<mapping_system>.<Perform Action>.<Qualify Component>

- Start at step 2.
- Component name will be PMRMapping.