

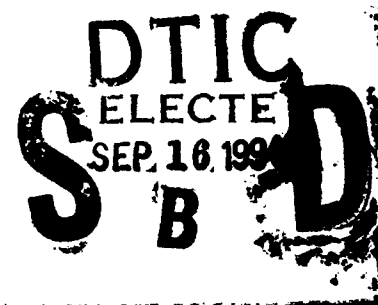
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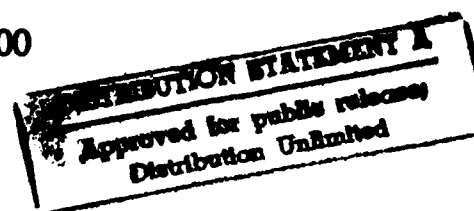
**Library Capability Demonstration
Central Archive for Reusable Defense Software
(CARDS)**

Informal Technical Data



Central Archive for Reusable Defense Software

STARS-VC-B018/003/00
29 January 1994



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INFORMAL TECHNICAL REPORT
For The
Software Technology for Adaptable, Reliable Systems
(STARS)

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

STARS-VC-B018/003/00
29 January 1994

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

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INFORMAL TECHNICAL REPORT

Library Capability Demonstration

**Central Archive for Reusable Defense Software
(CARDS)**

Principal Author:

Jim Petro

Date

Approvals:

Project Leader

Date

System Architect *Kurt Wallnau*

Date

Program Manager *Lorraine Martin*

Date

(Signatures on File)

Abstract

This is the third 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:

- Has simplified access to assets.
- Has captured the Portable, Reusable, Integrated Software Modules (PRISM) Program concepts in the CARDS Command Center Library (CCL).
- Provides access to prototypes of CARDS framework enhancements.

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1.0 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 will be given to the Air Force Program Manager on February 10, 1994 during the scheduled Program Management Review.

The goals of this demonstration are to show how the operational CARDS library:

- Has simplified access to assets.
- Has captured the Portable, Reusable, Integrated Software Modules (PRISM) Program concepts in the CARDS Command Center Library (CCL).
- Provides access to prototypes of CARDS framework enhancements.

The demonstration will be presented in two parts:

- A briefing (see Appendix A) of what is to be presented.
- The actual demonstration script (see Appendix B) to show current capabilities.

APPENDIX A - Library Capability Demonstration Slides

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-B018/003/00

10 February 1994

**James J. Petro
EWA, Inc.**



Presentation Overview

- **Goals**
- **Approach**
- **Implementation**
- **Issues**
- **Live Demonstration**



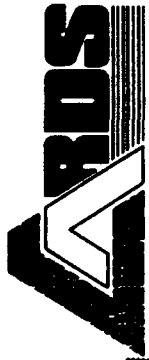
Goals

- Simplify access to CARDS assets.
- Capture PRISM concepts in the CCL.
- Provide access to prototypes of CARDS framework enhancements.



Approach

- **Provide access to CARDS documents outside of the Unix shell interface.**
- **Provide access to multiple libraries.**
- **Provide an explicit view of the PRISM architecture.**
- **Install the component qualification prototype.**



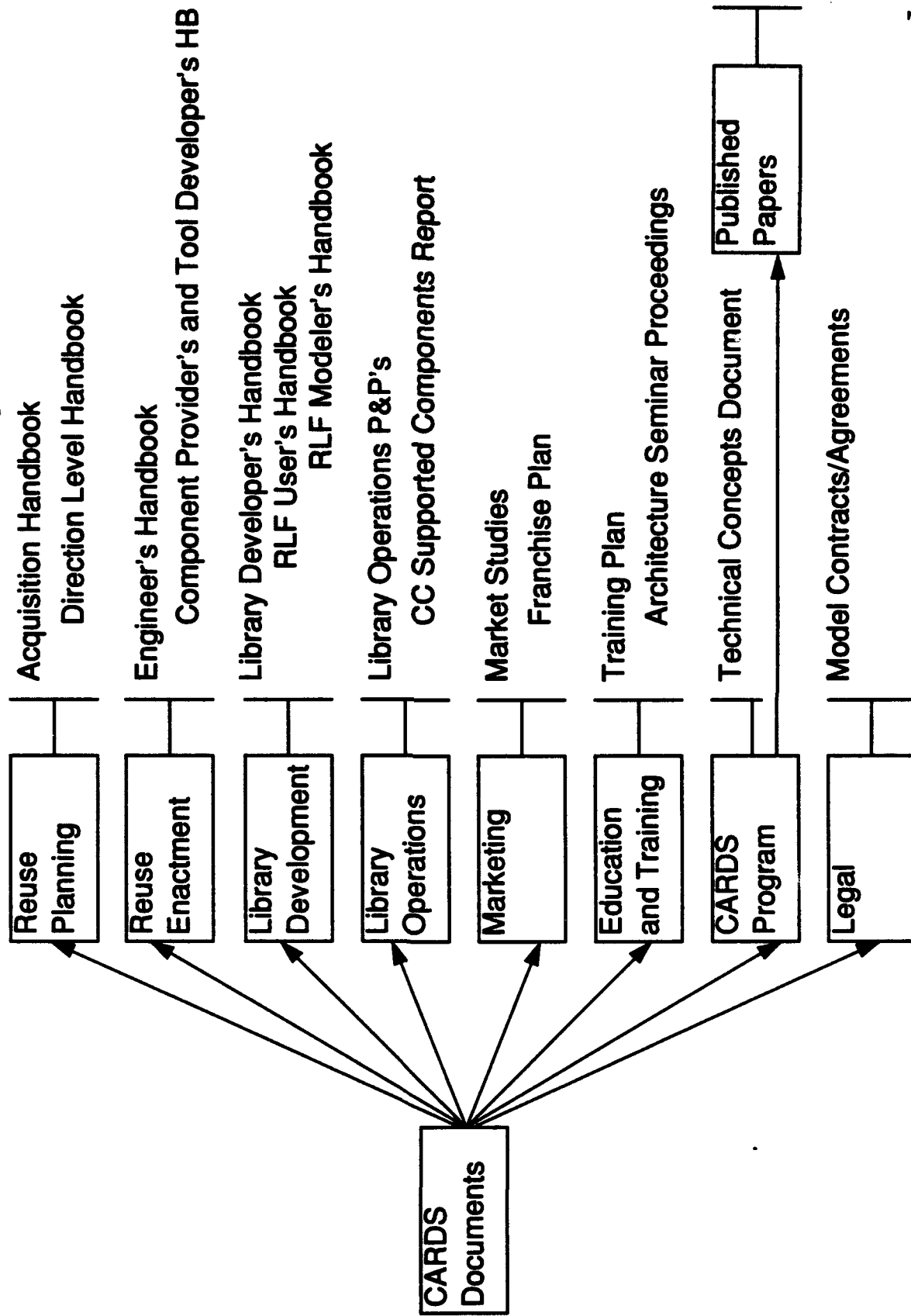
Implementation

Approach: Provide access to CARDS documents outside of the Unix shell interface.

- **Create an RLF model of library-independent documents.**
- **Provide viewing capability of abstracts of each document and descriptions of each category.**
- **Provide extraction capability of all available formats of each document.**



CARDS Documents Library Model

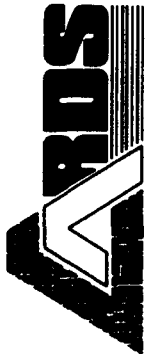




Implementation (Continued)

Approach: Provide access to multiple libraries.

- **Allow the user to choose a library from the launcher interface.**
- **Launcher interface uses configuration file so that libraries can be added/deleted without recompilation.**
- **Other operations associated with chosen library can be configured and executed.**



User Interaction

- User gets menu with all accessible libraries:
 - Currently operational is the CCL and the PDL;
 - The CARDS Document Library will be added.
- User can apply different operations to the selected library:
 - Currently user can enter library, or view a description or release notes for that library;
 - Will add operation to view and extract library dependent documents such as the LMD.

Choose a Library: Command Center v3.2.1

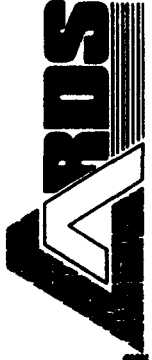
Choose a Command: Enter Library

Ok Quit Help

Choose a Library: PRISM Documentation v1.0

Choose a Command: Enter Library

Ok About Library... View Release Notes Help



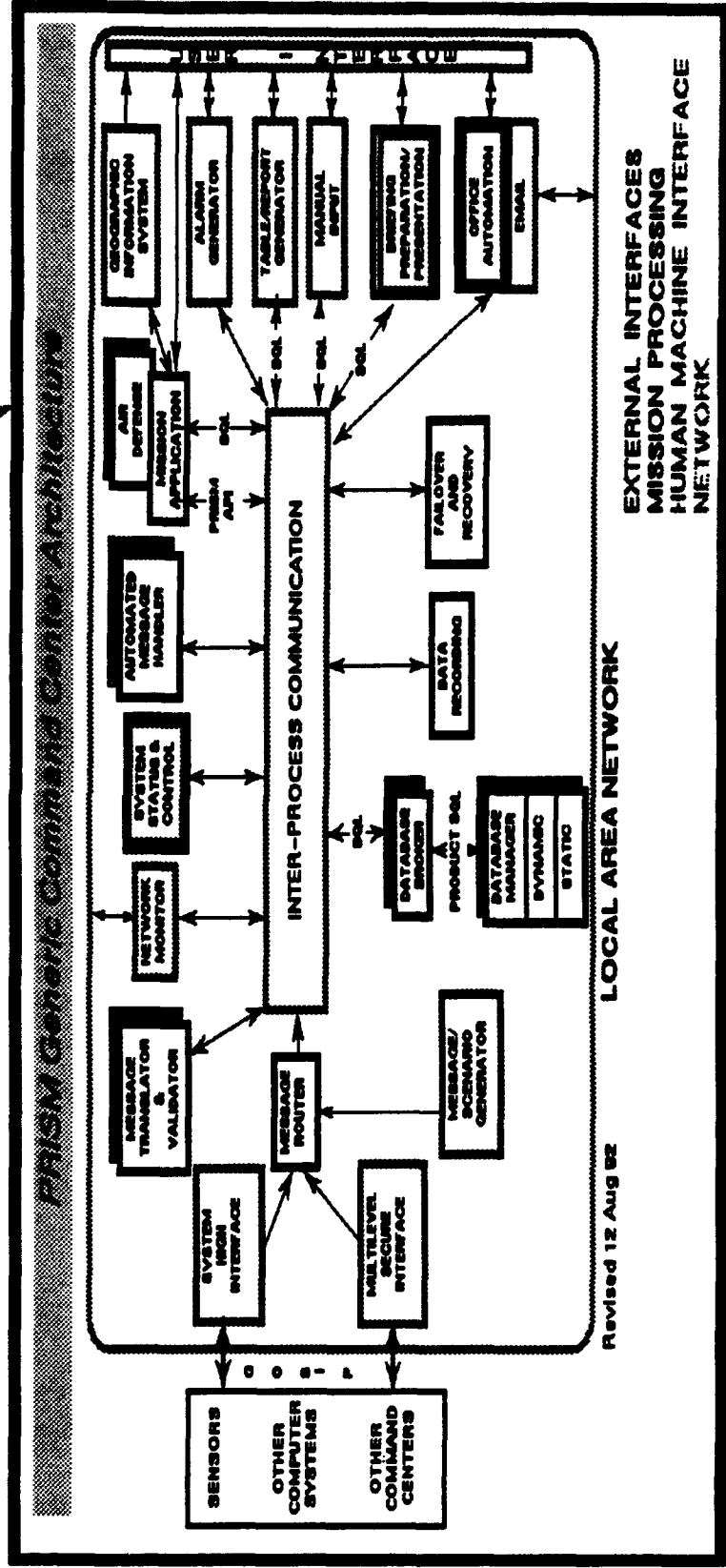
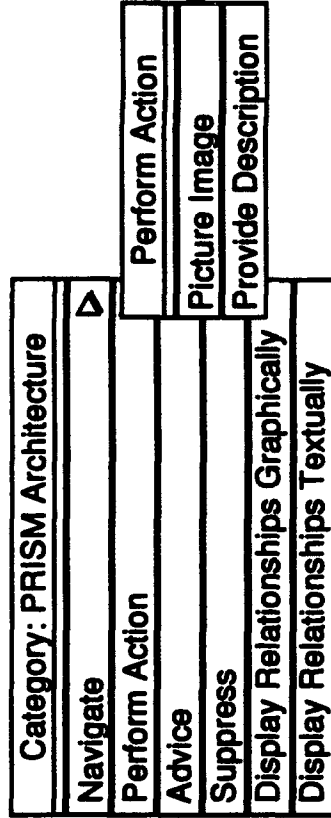
Implementation (Continued)

Approach: Provide an explicit view of the PRISM architecture.

- **Add an architecture node to the library model.**
- **Add the PRISM architecture node to the library model as a subcategory of architecture. (Other architectures can be added at a later time.)**
- **Provide picture of the architecture from the PRISM node.**
- **Connect architecture to component classes.**
 - **PRISM architecture node is modeled with relationship “has component classes”.**
 - **Component class relationship partitioned into separate classes.**
 - **Provides function of each component class in relation to architecture.**
 - **Allows navigation to each component class from architecture node (in aggregation view).**



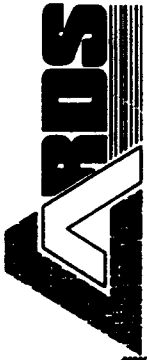
User Interaction





User Interaction (Continued)

Category: PRISM Architecture		Related Node
	Navigate	
Navigate	▷	
Perform Action	▷	
Advice		
Suppress		
	Go to a Related Category	
	Go to a Related Node	
	Go to a Referencing Category	
	Go to a Referencing Node	
	Go to Other Occurrence	
	Center this Category	
	Center this Category in Specialization V	
		has_DBMS (1..1)
		has_alarm_generator (1..1)
		has_automated_message_handler (1..1)
		has_briefing_system(1..1)
		has_component_class(15..15)
		has_database_user_interface(1..1)
		has_interprocess_communication(1..1)
		has_journalor(1..1)
		has_manual_input(1..1)
		has_message_generator(1..1)
		has_message_router(1..1)
		has_message_translator_validator_generator(1..1)
		has_network_manager(1..1)
		has_office_automation_sw(1..1)
		has_system_status_control(1..1)
		has_translator(1..1)



Implementation (Continued)

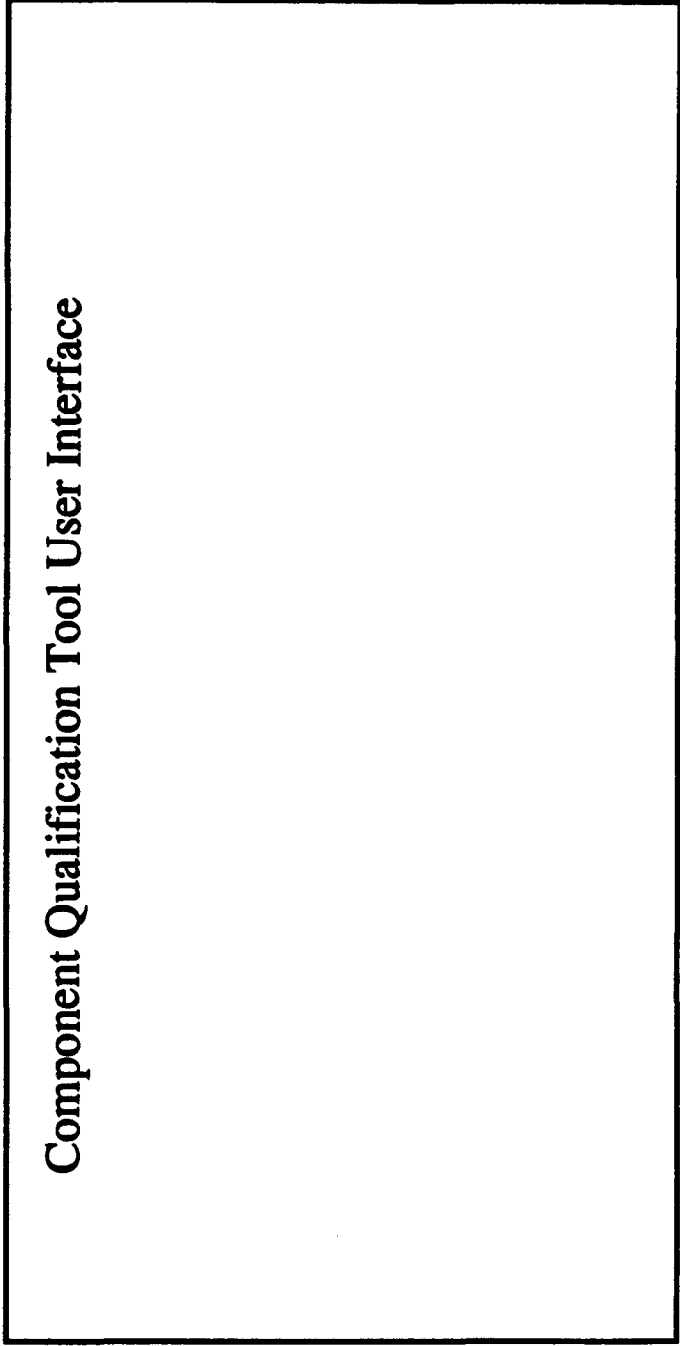
Approach: Install the component qualification prototype.

- **Make model consistent with domain requirements so that some are modeled as critical.**
- **Add component qualification at desktop_publisher and mapping_system.**

User Interaction

Category: desktop_publisher	
Navigate	Δ
Perform Action	
Advice	
Suppress	

Perform Action
Quality Component
Provide Description





Issues

- **No access control between libraries.**
- **The interface is still too slow.**
- **Architecture representation very immature.**
- **Component qualification tool should be added to more nodes.**

APPENDIX B - Library Capability Demonstration Script

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

NOTE: LMB is Left Mouse Button

1. Demonstrate launcher access to multiple services.

> User Action

: Result

*** Text augmentation**

> Type rungb from demo area.

: Launcher will appear.

> Click LMB on box next to "Choose a Library" and hold it down.

: All available libraries will appear.

*** Note that the PRISM Distribution and CARDS Documentation libraries are available as well as the CCL.**

> Click LMB on box next to "Choose a Command".

: All available commands for the current library will show up.

> Select "About Library . . ."

: "About Library . . ." fills the selection box.

> Click LMB on Ok button.

: A description of the currently selected library appears in the File Previewer.

> Pull down File menu from the File Previewer and select Quit.

: File Previewer goes away.

*** Other operations will be added, including viewing of library model documents.**

2. Display the CARDS Documents Library.

> Click LMB on box next to "Choose a Library" and select "CARDS Document Library".

: "CARDS Document Library" fills the selection box.

> Click LMB on box next to "Choose a Command and select "Enter Library".

: "Enter Library" fills the selection box.

> Click LMB on Ok button.

: The "CARDS Document Library" starts up.

> Click LMB on any document category node and select "Perform Action" and then "Provide Description".

:The File Previewer displays a description of that category.

> Pull down File menu from the File Previewer and select Quit.

: File Previewer goes away.

> Click LMB on any document object node (such as Library Development Handbook) and hold on "Perform Action".

: Walking menu displays the actions available.

* The user can extract all available formats of the document, display a text version of the document, or display just the abstract of the document.

> Select "Display Abstract".

: The File Previewer displays a the abstract.

> Pull down File menu from the File Previewer and select Quit.

: File Previewer goes away.

> Click LMB on Quit button and select "Quit Browser Session".

: Yes No dialog box appears.

> Select "Yes".

: Dialogue box and graphical browser go away.

3. Demonstrate the PRISM Architecture view.

> Bring Launcher forward again, if necessary. Click LMB on box next to "Choose a Library" and select "Command Center v3.3".

: "Command Center v3.3" fills the selection box.

> Click LMB on Ok button.

: The "Command Center v3.3" Library starts up.

* This takes a while.

> Click LMB on "Search" button.

: Search box appears.

> Type in "PRISM_Arch" and select the "OK" button.

: The Search List Selections box appears.

> Select PRISM_Architecture from the list and click the LMB on the "Apply" button.

: The view centers on PRISM_Architecture.

> Click LMB on the PRISM_Architecture node and select "Perform Action" and then "Picture Image".

: The picture of the PRISM Architecture appears.

> Click LMB on the picture.

: The picture goes away.

> Click LMB on the PRISM_Architecture node and select "Display Relationships Graphically"
: An RLF GB appears with the aggregational view from PRISM_Architecture.
* Now we can see how the component classes are connected to the PRISM Architecture.

> (From the relationships view) Click LMB on the PRISM_Architecture node and select "Navigate", walk to "Go to a Related Node" and hold the mouse button.
: The third walking menu appears with all the related nodes.
* These entries include the component classes in the PRISM Architecture (except for has_component_class and has_interprocess_communication).

> Select has_briefing_system from the third menu.
: The view will change to include briefing_system.

> Click LMB on the briefing_system node (not the has_briefing_system node) and select "Navigate" and then select "Center this category in specialization view".
: Specialization view centers that category.

> From the relationships view, click LMB on the "Quit" button and select "Delete Current View".
: Relationships view goes away.
* User can see components which are qualified for the briefing_systems component class.

4. Demonstrate the access to the component qualification tool.

> Click LMB on "Search" button.
: Search box appears.

> Type in "desktop_publisher" and select the "OK" button.
: The Search List Selections box appears.

> Select desktop_publisher from the list and click the LMB on the "Apply" button.
: The view centers on desktop_publisher.

> Click LMB on the desktop_publisher node and select "Display Relationships Graphically"
: An RLF GB appears with the aggregational view from desktop_publisher.
* Point out some of the relationships which are critical, such as "has_spell_checker". These are the relationships which must be filled for a component to be qualified as a desktop publisher.

> Click LMB on desktop_publisher and select "Perform Action" and then "Qualify Component".
: The Component Qualification tool appears.

End of demonstration.