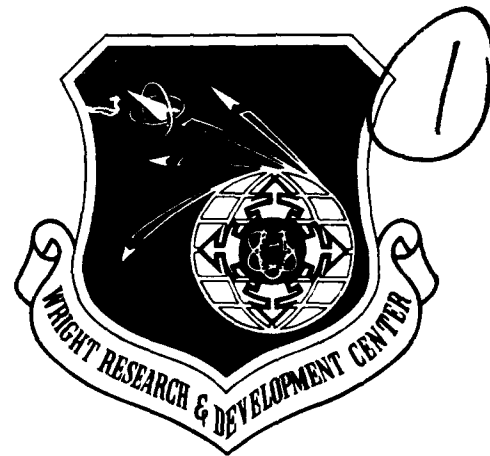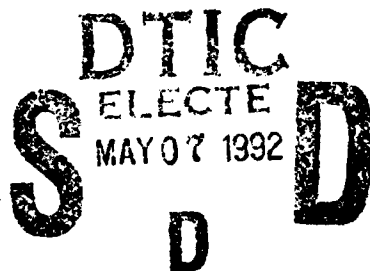# AD-A250 110

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Volume III
Part 6

INTEGRATED INFORMATION SUPPORT SYSTEM (IISS)
Volume III - Configuration Management
Part 6 - Configuration Management User Manual

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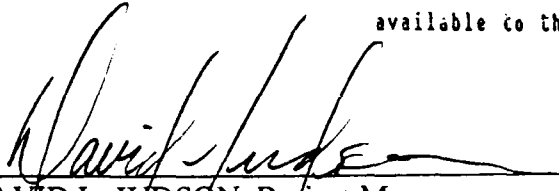
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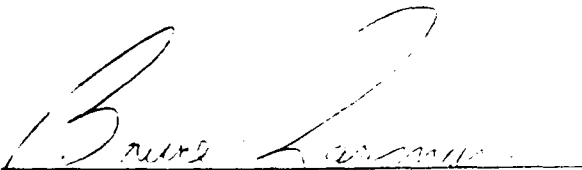
This technical report has been reviewed and is approved for publication.

This report is releasable to the National Technical Information Service (NTIS). At NTIS, it will be available to the general public, including foreign nations

_____
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DATE 25 July 91
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FOR THE COMMANDER:

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This manual describes the Software Configuration Management (SCM) functions that are used by developers of the IISS testbed software. These functions control the storage and the changing of the source code.

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FOREWORD

This technical report covers work performed under Air Force Contract F33600-87-C-0464, DAPro Project. This contract is sponsored by the Manufacturing Technology Directorate, Air Force Systems Command, Wright-Patterson Air Force Base, Ohio. It was administered under the technical direction of Mr. Bruce A. Rasmussen, Branch Chief, Integration Technology Division, Manufacturing Technology Directorate, through Mr. David L. Judson, Project Manager. The Prime Contractor was Integration Technology Services, Software Programs Division, of the Control Data Corporation, Dayton, Ohio, under the direction of Mr. W. A. Osborne. The DAPro Project Manager for Control Data Corporation was Mr. Jimmy P. Maxwell.

The DAPro project was created to continue the development, test, and demonstration of the Integrated Information Support System (IISS). The IISS technology work comprises enhancements to IISS software and the establishment and operation of IISS test bed hardware and communications for developers and users.

The following list names the Control Data Corporation subcontractors and their contributing activities:

SUBCONTRACTOR	ROLE
Control Data Corporation	Responsible for the overall Common Data Model design development and implementation, IISS integration and test, and technology transfer of IISS.
D. Appleton Company	Responsible for providing software information services for the Common Data Model and IDEF1X integration methodology.
ONTEK	Responsible for defining and testing a representative integrated system base in Artificial Intelligence techniques to establish fitness for use.
Simpact Corporation	Responsible for Communication development.

Structural Dynamics
Research Corporation

Responsible for User Interfaces,
Virtual Terminal Interface,and Network
Transaction Manager design,
development, implementation, and
support.

Arizona State University

Responsible for test bed operations
and support.

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ACRONYMS AND ABBREVIATIONS

CDM	Common Data Model
COMM	Communications Subsystem
IISS	Integrated Information Support System
NTM	Network Transaction Manager
UI	User Interface
UIMS	User Interface Management System
VAX	Virtual Address Extension
VTI	Virtual Terminal Interface

SECTION 1

INTRODUCTION

Software Configuration Management (SCM) is a system for controlling changes made to IISS software. The source code for IISS is stored in a protected environment, using Source Code Control System (SCCS). All changes to source programs, command files, and data files are made by using the SCM functions.

This manual describes SCM user functions only. The SCM administrative functions are described separately in the SCM Administrator's Manual.

All SCM users must understand the very basic information in Section 2 (OVERVIEW OF USER FUNCTIONS) and Section 4 (USING CM-BASIC STEPS). Section 3 contains very specific instructions for the ten user functions, arranged according to user functions requiring SCM changes privilege and user information functions available to all SCM users. Appendix A is a listing of the currently existing IISS subdirectories.

SECTION 2

OVERVIEW OF USER FUNCTIONS

SPR - Use the Digital Equipment Corp Command Language to open a new Command File, "SPR.COM" Software Problem Report (SPR). You must use SPR prior to using the following functions; they will ask you for the number of your SPR.

NEWITEM - Use NEWITEM for adding a new module to the IISS source code database. Your new module name must contain no more than seven supported characters, and an extension which is currently available on the system. (If you need a different extension, contact the SCM Administrator.) Your module name and extension must be unique to the system; if the name already exists in the system, you must rename it prior to using NEWITEM.

If you are adding a new module to the system which is very similar to an existing module, it will simplify your task to use a copy of the existing module as a template. DO NOT do a CHECKOUT of the existing module. Do a CHECKPRT instead, creating a copy of the existing module in your directory. Rename the file to the name you will use for your new item. Edit your file as needed and when your testing is complete, NEWITEM it.

CHECKOUT - Use CHECKOUT to move a copy of current source code to your directory, for the purpose of making permanent changes to it. If you have checked out a module to edit it, no one else is able to check it out until you RETURN it or DISPOSE it.

RETURN - Use RETURN to return the edited version of your checked out module to the IISS source code database. Your new code will be a part of the designated IISS release, unless further changes are made to it. Prior to returning the module, you must test it within your directory until it works properly.   *THIS IS VERY IMPORTANT*
If the module is to be compiled, it must compile and link properly, as well as work properly, within your directory before you RETURN it.

DISPOSE - Use DISPOSE if you have checked out a module and discovered that you do not have to make the anticipated changes at this time. The module will no longer be checked out: it will be available or check out and editing by yourself or others at a later time.

RESOLVE - Use RESOLVE when you have finished making all the changes needed to solve the problem you described in your SPR. You must RETURN or DISPOSE all checked out modules, as well as NEWITEM any necessary new modules prior to using RESOLVE.

The user information functions available to all SCM users are HASWHO, WHOHAS, CHECKPRT, and PSPR.

HASWHO - Use HASWHO to find out what modules a given user has currently checked out.

WHOHAS - Use WHOHAS to find out who has currently checked out a given module.

CHECKPRT - Use CHECKPRT to move a copy of current source code to your directory for inspection or use as a model when creating new source modules.

PSPR - Use Print Software Problem Report (PSPR) to get a listing of a given SPR either on your terminal, on the printer, or in a file.

SECTION 3

SCM PROCEDURES

3.1   USER FUNCTIONS

The user functions requiring SCM change privilege are SPR, NEWITEM, CHECKOUT, RETURN, DISPOSE, and RESOLVE. Contact the CM Administrator to obtain the use these commands.

3.1.1 SPR

Use SPR to open a new SPR (Software Problem Report). You must use SPR prior to using the following functions: they will ask you for the number of your SPR.

This procedure is used to initiate a software problem report. It prompts you for the following information:

1. Severity of the probler. (4 characters maximum) -- This is optional.

2. Subsystem (5 characters maximum) -- This is optional.

3. Report date (dd-mmm-yy) -- The date on which the problem occurs. By default, the report date is the date on which this procedure is executed.

4. Your name (15 characters maximum) -- The name of the person making the report.

5. Problem description (60 characters maximum per line). You must enter at least one line of description. If you enter more than 60 characters per line, you will have to re-enter that line. Describe your problem as accurately as possible. To terminate your description, press RETURN on the next description prompt.

After the above information is entered, the problem number is assigned and a software problem report is created with an 'OPEN' status.

o INVOCATION FORMAT

Enter SPR. At the end of the procedure, you have a choice of reporting another problem or terminating.

o ERROR MESSAGES

Not applicable.

3.1.2 NEWITEM

This procedure is used for putting new files into the Configuration Management system. As enhancements are implemented, new software modules must be developed and put into the system. Information is needed on how to compile and link the module. This information will be used to build the designated release for IISS. You are prompted for the following information:

1. User name (15 characters maximum) -- Enter your last name only. Your name must be registered with the SCM Administrator.

2. Release number -- The current release number is displayed. If your changes are for the current release, press <RETURN>. Otherwise, enter the actual release number, e.g. 2.1.

3. Software problem number (5 digits maximum) -- The problem number is checked to verify that it exists and that the problem is not 'RESOLVED'; if not, an error message is displayed and you are re-prompted for another problem number.

4. Subsystem (5 characters maximum) -- All valid subsystems for you to select are displayed. If the subsystem is invalid, you are re-prompted or the subsystem.

5. Host (I for IBM or V for VAX) -- If this is a host-dependent module, enter I or V; the default is none, so for generic modules, press <RETURN>.

6. Subdirectory name (20 characters maximum) -- Enter the subdirectory name for the subsystem. This determines the directory where the released version of the file will reside. Enter the subdirectory name without the preceding "."; e.g. the subdirectory .TEST under COMM would be specified with TEST. If no subdirectory name is entered, the subsystem directory, such as [IISS.COMM] will be the destination directory. The procedure checks that the indicated directory exists; if not, an error message is displayed and you are re-prompted for the subdirectory name. Contact the SCM Administrator to create a new subdirectory.

7. File name (7 characters maximum, plus extension) -- Enter the entire file name, including the period and the extension. If you do not enter the extension, you will be prompted for it.

8. Documentation Group (10 character maximum) -- All valid documentation groups for you to select are displayed. If the documentation group is invalid, you are re-prompted for it.

9. Source directory -- This specifies the directory under which the new item currently resides. The default is the directory where this procedure is being executed.

The procedure checks that the indicated file exists under the specified directory; if not an error message is displayed and you are re-prompted for the file name, extension, and source directory.

10. If the file extension is COB, MAR, C, ASM, or FOR, you are prompted for the following information:

   o Is this a top level module? (Y for yes and N for no) -- If this is a to level module whose executable image has to be built, the answer is Y.

   o Link command file name (10 characters maximum) -- The link command file contains the correct procedure to create an executable image. This procedure must use the IISS system logicals as well as place the executable produced in the common run area; format CMDIR: [RUNAREA]. For validation purposes, a link command file has to previously have been newitemed. If the command file is not found, you will be re-prompted for the link command file name. If you have not already newitemed the link command file, <CTRL Y> out and newitem it first.

   o Link parameters (no limit) -- The link command file may require link parameters. It is your responsibility to insure the accuracy of thi_ entry.

After the database is updated, the new file will be moved from the source directory to the pre-release area.

You are then asked if you want to newitem another file. Answer "Y" if the release number, SPR number, the subsystem, the host, the destination subdirectory, the documentation group and the source directory are the same as the last one. You can do your next newitem by entering the file name only (plus the additional parameters for a compiled module).

o   INVOCATION FORMAT

This procedure is invoked in two ways, the interactive mode and the batch mode.

   1. Interactive mode -- Enter NEWITEM and let the procedure prompt you field by field.

   2. Batch invocation of newitem procs > Replacement
      There are batch newitem command procedures available for each subsystem. Each procedure may be executed using the following syntax:

      $RYYXXXNEW Username SPR number Host subdirectory
                 filename Documentation Group
                 SOURCE-DIRECTORY
      where YY = The Release Number e.g. 23 for Release 2.3

      and

      where XXX = Subsystem Name e.g. VI or CDM

o   ERROR MESSAGES

1.   INVALID USER NAME, TO REGISTER, CONTACT YOUR
     CONFIGURATION ADMINISTRATOR -- Your name is invalid or
     you have not registered. You are re-prompted to enter
     the correct name.

2.   FILE ALREADY EXISTS, PLEASE RE-ENTER -- There is a file
     in the system with the same file name and extension.
     Therefore, you cannot add this as a new item. You are
     re-prompted for the file name and extension.

3.   THE SPECIFIED FILE OR DIRECTORY CANNOT BE FOUND, OR
     THERE IS A PROTECTION VIOLATION. PLEASE RE-ENTER
     DIRECTORY AND FILE NAME -- Either the source directory
     is invalid, or the file is not found under the
     specified source directory, or there is a protection
     violation on the file. You are re-prompted for the
     file name, extension and source directory.

4.   INVALID PROBLEM NUMBER, PLEASE RE-ENTER -- The problem
     number does not exist; you are asked to enter another
     number.

5.   PROBLEM HAS BEEN RESOLVED. NO MORE ITEMS CAN BE ADDED
     AGAINST THIS PROBLEM -- You will be prompted to enter
     another problem number.

6.   INVALID SUBDIRECTORY NAME FOR SUBSYSTEM, THE
     SUBDIRECTORY MUST BE CREATED PRIOR TO THE RELEASE,
     CONTACT THE SYSTEM ADMINISTRATOR -- The subdirectory
     for the subsystem specified is not valid. You should
     contact the SCM Administrator to create a new
     subdirectory prior to releasing any new items. You are
     re-prompted for the subdirectory name.

7.   INVALID LINK COMMAND FILE, PLEASE RE-ENTER -- The link
     command file is not found under the Subsystem specified
     previously. The link command file must have already
     been newitemed under the same subsystem as the actual
     source code module. You are re-prompted for the link
     command file name.

3.1.3 CHECKOUT

This procedure is used if you want to modify an existing
file. It allows you to check out a file which is not currently
checked out by a user. Once a file has been checked out and has
not been returned or disposed, no user can check it out. The file
has to be checked out against an SPR number. You are prompted for
the following information:

1.   User name (15 characters maximum) -- Enter your last
     name only. Your name must be registered with the SCM
     Administrator.

2. Software Problem Number (5 digits maximum) -- The problem number is checked to verify that it exists, and that the problem is not 'RESOLVED'; if not, an error message is displayed and you are re-prompted for another problem number.

3. Subsystem (5 characters maximum) -- Give the name of the subsystem for the file. The procedure displays all valid subsystems for you to select. If the subsystem is invalid, you will be re-prompted to enter the correct subsystem.

4. Host (I for IBM or V for VAX) -- If this is a host-dependent module, enter I or V; the default is none, so for generic modules, press <RETURN>.

5. File name (7 characters maximum, plus extension) -- Enter the entire file name, including the period and the extension. If you do not enter the extension, you will be prompted for it. If the file does not exist, you are re-prompted for the file name. If the file has been checked out by a user, the name of the user who checked it out is displayed and the procedure terminates. If the file is not currently checked out by a user, the procedure continues.

6. Destination directory (full directory specification with DRIVEL:[]) -- The destination directory is where the file will be moved. The default is the directory where the procedure is executed. If the destination directory is invalid, you are re-prompted for another destination directory.

After validating all input, the procedure moves the latest coy of the file to the destination directory.

You are then asked if you want to checkout another file. Answer "Y" if the SPR number, the subsystem, the host, and the destination directory are the same as the last one. You can do your next checkout by entering the file name only.

o INVOCATION FORMAT

The procedure may be invoked in either the interactive mode or the b tch mode.

1. Interactive mode -- Enter CHECKOUT and let the procedure prompt you field by field.

2. Batch mode -- Enter:

CHECKOUT username SPR# subsystem host filename destination-directory next

You need not enter all inputs, as long as they are in the correct order. You will be prompted for the missing ones. For any default parameter use BLANK. For example, a typical line in a command procedure to check out a file is:

CHECKOUT userid 253 cm blank temp.com blank blank

o ERROR MESSAGES

1. INVALID USER NAME, TO REGISTER, CONTACT YOUR CONFIGURATION ADMINISTRATOR -- Your name is invalid or not registered. You are re-prompted to enter the correct name.

2. NO SUCH FILE AND EXTENSION, PLEASE RE-ENTER -- You are trying to check out a file that does not exist. You are re-prompted to enter the correct file name and extension.

3. XX IS CURRENTLY CHECKED OUT BY XX -- The file is checked out by another user. The procedure terminates.

4. INVALID PROBLEM NUMBER, PLEASE RE-ENTER -- The number does not exist; you are asked to enter another number.

5. PROBLEM HAS BEEN RESOLVED. NO MORE ITEMS CAN BE CHECKED OUT AGAINST THIS PROBLEM -- You are re-prompted to enter another problem number.

6. INVALID DESTINATION DIRECTORY NAME -- The destination directory does not exist. You are re-prompted to enter a correct destination directory.

3.1.4 RETURN

A file that has been checked out for modifications must be returned to configuration control before another user can check it out. A file should not be returned until it has been thoroughly tested. It is your responsibility to follow this procedure properly to protect the integrity of IISS software. You are prompted for the following information:

1. User name (15 characters maximum) -- Enter your last name only. The procedure validates your name after the input of file name and extension.

2. Release number -- The current release number is displayed. If your changes are for the current release, press <RETURN>. Otherwise, enter the actual release number, e.g. 2.1.

3. Host (I for IBM or V for VAX) -- If this is a host-dependent module, enter I or V; the default is none, so for generic modules, press <RETURN>.

4. File name (7 characters maximum, plus extension) -- Enter the entire file name, including the period and the extension. If you do not enter the extension, you will be prompted for it. The file name is used to determine whether the file has been checked out, and by whom. I the file is not checked out, the procedure terminates. If the file is checked out by another

user, the name of the user who checked out the file is
displayed and the procedure terminates. If you have
checked out the file, it can be returned.

5. Source directory (Full directory specification with [])
    -- This directory is the present location of the
    modified version of the file. The default is the
    directory where the procedure is executed.

After validating all inputs, the procedure moves the file
from the source directory to the pre-release area. The software
problem cross reference files are updated so that the user can
resolve the problem if all items are returned. From now on,
another user can check out this file for modifications.

You are then asked if you want to return another file.
Answer "Y" if the release number, the host, and the source
directory are the same as the last one. You can do your next
return by entering the file name only.

o INVOCATION FORMAT

This procedure may be invoked in either interactive mode
mode or batch mode.

1. Interactive mode -- Enter RETURN and let the procedure
    prompt you field by field.

2. Batch mode -- Enter:

    RETURN username release# host filename
        source-directory next

    You need not enter all inputs, as long as they are in
    the correct order. You will be prompted for the
    missing ones. For any default parameter use BLANK.
    For example, a typical line in a command procedure to
    return a file is:

    RETURN userid blank blank temp.com blank blank

o ERROR MESSAGES

1. XX IS CURRENTLY CHECKED OUT BY XX -- This indicates
    that the file is checked out by another user.
    Therefore, you cannot return the file. The procedure
    terminates.

2. ITEM XX IS NOT CHECKED OUT, IT CANNOT BE RETURNED --
    The file was never checked out. You are not allowed to
    return an item that has not been checked out. If this
    is a new item, use NEWITEM; otherwise use the CHECKOUT
    procedure to check out the file first. The procedure
    terminates.

3. THE SPECIFIED FILE OR DIRECTORY CANNOT BE FOUND, OR
    THERE IS A PROTECTION VIOLATION. PLEASE RE-ENTER
    DIRECTORY AND FILE NAME -- The source directory is
    invalid, or the file is not found under the specified

source directory, or there is a protection violation on the file. You are re-prompted for the file name, extension, and source directory.

3.1.5   DISPOSE

This procedure allows you to return a checked out file to configuration control without making any changes to the file. You are prompted for the following information:

1.   User name (15 characters maximum) -- Enter your last name only. You have to be the one who has currently checked out the file.

2.   Host (I for IBM or V for VAX) -- If this is a host-dependent module, enter I or V; the default is none, so for generic modules, press <RETURN>.

3.   File name (7 characters maximum, plus extension) -- Enter the entire file name, including the period and the extension. If you do not enter the extension, you will be prompted for it. The file name is used to indicate whether the file has been checked out, and by whom. If the file was not checked out, the procedure terminates. If the file was checked out by another user, the name of the user who checked out the file is displayed and the procedure terminates. If you have checked out the file, it can be disposed.

This procedure cancels all checkout references to the file, so that another user is allowed to check out the file for modification.

You are then asked if you want to dispose another file. Answer "Y" if the host is the same as the last one. You can do your next dispose by entering the file name only.

o   INVOCATION FORMAT

This procedure may be invoked in either interactive mode or batch mode.

1.   Interactive mode -- Enter DISPOSE and let the procedure prompt you field by field.

2.   Batch mode -- Enter:

DISPOSE username host filename next

You need not enter all inputs, as long as they are in the correct order. You will be prompted for the missing ones. For any default parameter use BLANK. For example, a typical line in a command procedure to dispose a file is:

DISPOSE userid blank temp.com blank

o ERROR MESSAGES

1. XX IS CURRENTLY CHECKED OUT BY XX -- The file is checked out by another user; therefore, you cannot dispose the file. The procedure terminates.

2. ITEM XX IS NOT CHECKED OUT, IT CANNOT BE DISPOSED -- The item has not been checked out. The procedure terminates.

3.1.6 RESOLVE

This procedure closes an SPR. It is used after all software modifications relating to the problem have been made and any checked out files have been returned or disposed. You are prompted for the following information:

1. Software problem number (5 digits maximum) -- The problem status must not already be 'RESOLVED'. If the number is valid, information about the problem will be displayed on the terminal. The files that have been checked out or newitemed are also displayed, with their status. If the problem can be resolved, you are prompted for the following information:

   1. Name of the user who is resolving the problem (15 characters maximum).

   2. Date on which the problem is resolved (dd-mmm-yy) -- The default is the date on which the procedure is executed.

   3. Resolution description (60 characters maximum per line) -- At least one line to describe the resolution must be entered. To terminate the description, enter an empty line.

Once a problem has been 'RESOLVED', no more files can be checked out against this problem number. All resolved problem reports continue to be stored, so that they can be printed at any time for reference.

o INVOCATION FORMAT

This procedure may be invoked in either interactive mode or batch mode.

1. Interactive mode -- Enter RESOLVE and let the procedure prompt you field by field.

2. Batch mode -- Enter:

   RESOLVE username blank

For any default parameters use BLANK. You will be prompted for any missing fields. At least one line of description must be entered.

o ERROR MESSAGES

   1. INVALID PROBLEM NUMBER, PLEASE RE-ENTER -- The problem
       number does not exist; you are prompted for another
       number.

   2. PROBLEM XX ALREADY RESOLVED -- You are prompted for
       another number.

   3. PROBLEM CANNOT BE RESOLVED BECAUSE OF OUTSTANDING ITEMS
       --There are files that have been checked out against
       this problem number that have not been returned or
       disposed. You are prompted for another number.

3.2   USER TOOLS

3.2.1 HASWHO

This procedure allows you to display all files that are
currently checked out by a user. You are prompted for the
following information:

   1. User name (15 characters maximum)
       All files currently checked out by the user are
       displayed.

o INVOCATION FORMAT

There are two ways to invoke this procedure, the
interactive mode and the batch mode.

   1. Interactive mode -- Enter HASWHO and let the procedure
       prompt you field by field.

   2. Batch mode -- Enter:

       HASWHO username

o ERROR MESSAGES

   1. USER XX HAS NOT CHECKED OUT ANY ITEMS -- Either the
       user name does not exist or the user has not checked
       out any files. The procedure terminates.

3.2.2 WHOHAS

This procedure allows you to find out who has currently
checked out a file. You are prompted for:

   1. File name (7 characters maximum, without extension)

   2. File extension (3 characters maximum)

   3. Host (One character: I for IBM, V for VAX, or BLANK for
       generic)

If the file is currently checked out, the name of the user
who checked it out is displayed.

o INVOCATION FORMAT

There are two ways to invoke this procedure, the interactive mode and the batch mode.

1. Interactive mode -- Enter WHOHAS and let the procedure prompt you field by field.

2. Batch mode -- Enter:

WHOHAS filename extension host

The procedure will prompt you for any missing fields.

o ERROR MESSAGES

1. XX IS NOT CHECKED OUT -- The file has not been checked out or the file name or extension is incorrect. The procedure terminates.

3.2.3 CHECKPRT

This procedure is used to move a copy of current source code to your directory. The file is to be used for reading, or as a template for new modules. A file that has been checkprinted will not be returned or disposed. You are prompted for the following information:

1. User name (15 characters maximum) -- Enter your last name only. Your name must be registered with the SCM Administrator.

2. Subsystem (5 characters maximum) -- Give the name of the subsystem for the file. The procedure displays all valid subsystems for you to select. If the subsystem is invalid, you will be re-prompted to enter the correct subsystem.

3. Host (I for IBM or V for VAX) -- If this is a host-dependent module, enter I or V; the default is none, so for generic modules, press <RETURN>.

4. File name (7 characters maximum, plus extension) -- Enter the entire file name, including the period and the extension. If you do not enter the extension, you will be prompted for it. If the file does not exist, you are re-prompted for the file name.

5. Destination directory (full directory specification with DRIVE:[]) -- The destination directory is where the file will be moved. The default is the directory where the procedure is executed. If the destination directory is invalid, you are re-prompted for another destination directory.

After validating all input, the procedure moves the latest copy of the file to the destination directory.

You are then asked if you want to checkprint another file. Answer "Y" if the subsystem, the host, and the destination directory are the same as the last one. You can do your next checkprint by entering the file name only.

o INVOCATION FORMAT

This procedure is invoked with the interactive mode or the batch mode.

1. Interactive mode -- Enter CHECKPRT and let the procedure prompt you field by field.

2. Batch mode -- Enter:

    CHECKPRT username subsystem host filename
        destination-directory next

    You need not enter all inputs, as long as they are in the correct order. You will be prompted for the missing ones. For any default parameter use BLANK. For example, a typical line in a command procedure to check out a file is:

    CHECKPRT userid cm blank temp.com blank blank

o ERROR MESSAGES

1. INVALID USER NAME, TO REGISTER, CONTACT YOUR CONFIGURATION ADMINISTRATOR -- Your name is invalid or not registered. You are re-prompted to enter the correct name.

2. NO SUCH FILE AND EXTENSION, PLEASE RE-ENTER -- You are trying to checkprint a file that does not exist. You are re-prompted to enter the correct file name and extension.

3. INVALID DESTINATION DIRECTORY NAME -- The destination directory does not exist. You are re-prompted to enter a correct destination directory.

3.2.4 PSPR

This procedure prints an SPR (Software Problem Report). It may be printed on a terminal or the line printer, or may be stored in a file to be read later. You are prompted for the following information:

1. Problem number (5 digits maximum) -- The procedure checks the validity of the number.

2. 'Do you want to print on the printer (Y/N) ?' -- If no input is entered, the answer defaults to 'N'. 'Y' allows you to produce a hard copy report.

3. An output device or a file name -- If no input is entered, the report is displayed on the terminal. If the report is stored in a file, it may be printed or displayed on the screen later.

General information that was entered when SPR was executed is displayed at the top of the report. If the problem was resolved, the resolution description will also be displayed. If files have been checked out against this problem, information will be displayed about each one, including the file name, the subsystem, and the status of the file -- whether it is returned (R), disposed (D), still checked out (unresolved - U), or is a new item (N).

o INVOCATION FORMAT

Enter PSPR. When the procedure is finished, you are asked whether you want to print another report. If not, the procedure terminates.

o ERROR MESSAGES

1. INVALID PROBLEM NUMBER, PLEASE RE-ENTER -- The problem number does not exist; you are prompted for another number.

2. INVALID OUTPUT DEVICE SPECIFICATION -- The output device or file name is specified incorrectly. The output is displayed on the terminal instead of the device or file specified.

SECTION 4

EXAMPLE OF SCM PROCESS

The following steps are normally used to solve a problem
in your subsystem:

1. Figure out the extent of your problem or enhancement.
    What existing files will need to be changed, and what
    new modules do you need?

2. Run SPR. You will write a description of your
    problem.

3. Run CHECKOUT, once for each existing file you may
    want to modify. You should run this procedure from
    the directory under which you want to modify the
    code. This simplifies the procedure, allowing a
    default destination directory.

4. Modify your code as needed.

5. Create your new files.

6. Test your new system thoroughly. Code must work
    properly before it is returned to the system.

7. Run RETURN for each checked out file that you
    modified. You should run this procedure from the
    directory under which the modified code resides; it
    simplifies the procedure, since you can use the
    default source directory.

8. Run DISPOSE for each checked out file that you left
    unchanged.

9. Run NEWITEM for each new file you created. Again,
    run this procedure from the source directory of the
    new files.

10. Run RESOLVE to complete the SPR (Software Problem
    Report).

At any time throughout this procedure, run PSPR or WHOHAS
or HASWHO as needed. If you decide that more files need to be
checked out as you are modifying the code, go ahead and check
them out under the same SPR number, and then return them or
dispose them as is appropriate. When you resolve the problem,
you are finished with that SPR. Any new changes need to be made
by starting the procedure over with a new SPR.

APPENDIX A

EXISTING SUBDIRECTORIES

The following list shows the current, existing IISS source code subdirectories. Whenever a new module is added to IISS (by using NEWITEM), the directory under which it will reside must be specified.

1.	[IISS.CDM]	26.	[IISS.UI.EDSFMT]
2.	[IISS.CDM.CDMR]	27.	[IISS.UI.EDSGTL]
3.	[IISS.CDM.CDM]	28.	[IISS.UI.EDSLE]
4.	[IISS.CDM.DEMO]	29.	[IISS.UI.EDSLIBS]
5.	[IISS.CDM.NDDL]	30.	[IISS.UI.EDSPAP]
6.	[IISS.CDM.NDML]	31.	[IISS.UI.EDSTAG]
7.	[IISS.CDM.TEMPS]	32.	[IISS.UI.FDFE]
8.	[IISS.CDM.TEST]	33.	[IISS.UI.FE]
9.	[IISS.CDM.TOOLS]	34.	[IISS.UI.FLAN]
10.	[IISS.CM]	35.	[IISS.UI.FORMS]
11.	[IISS.COMM]	36.	[IISS.UI.FP]
12.	[IISS.COMM.TEST]	37	[IISS.UI.FPAI]
13.	[IISS.IPC]	38.	[IISS.UI.H]
14.	[IISS.NTM]	39.	[IISS.UI.HRW]
15.	[IISS.NTM.LIBDAT]	40.	[IISS.UI.INC]
16.	[IISS.NTM.MONITOR]	41.	[IISS.UI.LOS]
17.	[IISS.NTM.MPU]	42.	[IISS.UI.LOSKB]
18.	[IISS.NTM.SERVICES]	43.	[IISS.UI.MININTM]
19.	[IISS.NTM.TEST]	44.	[IISS.UI.MSG]
20.	[IISS.NTM.UTILITY]	45.	[IISS.UI.PROTO]
21.	[IISS.UI]	46.	[IISS.UI.RAP]
18.	[IISS.UI.ACTEST]	47.	[IISS.UI.RAPSA]
21.	[IISS.UI.CLIB]	48.	[IISS.UI.SAFP]
22.	[IISS.UI.DEVDRV]	49.	[IISS.UI.TE]
23.	[IISS.UI.DRIVER]	50.	[IISS.UI.TEST]
24.	[IISS.UI.EDSAFM]	51.	[IISS.UI.TRANS]
25.	[IISS.UI.EDSDTD]	52.	[IISS.UI.UIS]
		53.	[IISS.UI.UTIL]

END

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