INTEGRATED INFORMATION
SUPPORT SYSTEM (IISS)
Volume VIII - User Interface Subsystem
Part 6 - Form Processor Product Specification

General Electric Company
Production Resources Consulting
One River Road
Schenectady, New York 12345

November 1985

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

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7 Aug 86

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Copies of this report should not be returned unless return is required by security considerations, contractual obligations, or notice on a specific document.
This specification establishes the detailed design of a computer program identified as the Form Processor (FP). The FP is a set of callable execution routines available to an application program for manipulating and displaying electronic forms. The FP routines allow programs and their users to communicate through redefined forms on a terminal.
Title

Integrated Information Support System (IISS)
Vol VIII - User Interface Subsystem
Part 6 - Form Processor Product Specification

A.S.D 86 1446
17 Jul 1986
PREFACE

This product specification covers the work performed under Air Force Contract F33615-80-C-5155 (ICAM Project 6201). This contract is sponsored by the Materials Laboratory, Air Force Systems Command, Wright-Patterson Air Force Base, Ohio. It was administered under the technical direction of Mr. Gerald C. Shumaker, ICAM Program Manager, Manufacturing Technology Division, through Project Manager, Mr. David Judson. The Prime Contractor was Production Resources Consulting of the General Electric Company, Schenectady, New York, under the direction of Mr. Alan Rubenstein. The General Electric Project Manager was Mr. Myron Hurlbut of Industrial Automation Systems Department, Albany, New York.

Certain work aimed at improving Test Bed Technology has been performed by other contracts with Project 6201 performing integrating functions. This work consisted of enhancements to Test Bed software and establishment and operation of Test Bed hardware and communications for developers and other users. Documentation relating to the Test Bed from all of these contractors and projects have been integrated under Project 6201 for publication and treatment as an integrated set of documents. The particular contributors to each document are noted on the Report Documentation Page (DD1473). A listing and description of the entire project documentation system and how they are related is contained in document FTR620100001, Project Overview.

The subcontractors and their contributing activities were as follows:

TASK 4.2
Subcontractors | Role
---|---
Boeing Military Aircraft Company (BMAC) | Reviewer
D. Appleton Company (DACOM) | Responsible for IDEF support, state-of-the-art literature search
General Dynamics/ Ft. Worth | Responsible for factory view function and information models
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<td>Illinois Institute of Technology</td>
<td>Responsible for factory view function research (IITRI) and information models of small and medium-size business</td>
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<tr>
<td>North American Rockwell</td>
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<tr>
<td>Northrop Corporation</td>
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<tr>
<td>Pritsker and Associates</td>
<td>Responsible for IDEF2 support</td>
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<tr>
<td>SofTech</td>
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**TASKS 4.3 - 4.9 (TEST BED)**

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<td>Boeing Military Aircraft Company (BMAC)</td>
<td>Responsible for consultation on applications of the technology and on IBM computer technology.</td>
</tr>
<tr>
<td>Computer Technology Associates (CTA)</td>
<td>Assisted in the areas of communications systems, system design and integration methodology, and design of the Network Transaction Manager.</td>
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<tr>
<td>Control Data Corporation (CDC)</td>
<td>Responsible for the Common Data Model (CDM) implementation and part of the CDM design (shared with DACOM).</td>
</tr>
<tr>
<td>D. Appleton Company (DACOM)</td>
<td>Responsible for the overall CDM Subsystem design integration and test plan, as well as part of the design of the CDM (shared with CDC). DACOM also developed the Integration Methodology and did the schema mappings for the Application Subsystems.</td>
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Subcontractors

Digital Equipment Corporation (DEC)

Role
Consulting and support of the performance testing and on DEC software and computer systems operation.

McDonnell Douglas Automation Company (McAuto)

Role
Responsible for the support and enhancements to the Network Transaction Manager Subsystem during 1984/1985 period.

On-Line Software International (OSI)

Role
Responsible for programming the Communications Subsystem on the IBM and for consulting on the IBM.

Rath and Strong Systems Products (RSSP) (In 1985 became McCormack & Dodge)

Role
Responsible for assistance in the implementation and use of the MRP II package (PIOS) that they supplied.

SofTech, Inc.

Role
Responsible for the design and implementation of the Network Transaction Manager (NTM) in 1981/1984 period.

Software Performance Engineering (SPE)

Role
Responsible for directing the work on performance evaluation and analysis.

Structural Dynamics Research Corporation (SDRC)

Role
Responsible for the User Interface and Virtual Terminal Interface Subsystems.

Prime contractors under other projects who have contributed to Test Bed Technology, their contributing activities and responsible projects are as follows:

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<td>Hughes Aircraft Company (HAC)</td>
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<td>Structural Dynamics Research Corporation</td>
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SECTION 1

SCOPE

1.1 Identification

This specification establishes the detailed design of a computer program identified as the Form Processor, hereinafter referred to as the FP. The FP is one configuration item of the Integrated Information Support System (IISS) User Interface (UI).

1.2 Functional Summary

One of the objectives of the IISS testbed is to allow applications to be run from a wide variety of terminals using formatted screens for input and output of application data. Instead of the application programs having to contain terminal dependent code to send/receive formatted screens to/from various types of terminals and to perform terminal control functions, the program may use the set of callable execution time routines of the FP.

The major functions of the FP are:

1. Opening and displaying a form, a template defining fields and their attributes.
2. Placing data into a form and/or into a form message line.
3. Sending the form to the terminal.
4. Reading the data from the terminal.
5. Stacking/replacing forms currently open for the application program.
6. IISS logon processing.
7. NTM message processing.
8. Window management processing.
SECTION 2

DOCUMENTS

2.1 Reference Documents

[1] Structural Dynamics Research Corporation, Application
   Interface Product Specification, PS 620144700, 1
   November 1985.

[2] Structural Dynamics Research Corporation, Forms
   Driven Form Editor Product Specification, PS 620144402,
   1 November 1985.

[3] Structural Dynamics Research Corporation, Forms
   Language Compiler Product Specification, PS 620144401,
   1 November 1985.

[4] Structural Dynamics Research Corporation, Text Editor

[5] Structural Dynamics Research Corporation, Rapid
   Application Generator Product Specification, PS 620144502,
   1 November 1985.

   Writer Product Specification, PS 620144501, 1
   November 1985.

[7] Structural Dynamics Research Corporation, User
   Interface Services Product Specification, PS 620144100,
   1 November 1985.

[8] Structural Dynamics Research Corporation, Virtual
   Terminal Product Specification, PS 620144300, 1
   November 1985.

[9] Structural Dynamics Research Corporation, Form
    Processor Development Specification, DS 620144200B,
    1 November 1985.

[10] Structural Dynamics Research Corporation, Form
    Processor User Manual, UM 620144200B, 1 November
    1985.
2.2 Terms and Abbreviations

**American Standard Code for Information Interchange:** (ASCII), the character set defined by ANSI X3.4 and used by most computer vendors.

**Application Interface:** (AI), subset of the IISS User Interface that consists of the callable routines that are linked with applications that use the Form Processor or Virtual Terminal. The AI enables applications to be hosted on computers other than the host of the User Interface.

**Application Process:** (AP), a cohesive unit of software that can be initiated as a unit to perform some function or functions.

**Attribute:** field characteristic such as blinking, highlighted, black, etc. and various other combinations. Background attributes are defined for forms or windows only. Foreground attributes are defined for items. Attributes may be permanent, i.e., they remain the same unless changed by the application program, or they may be temporary, i.e., they remain in effect until the window is redisplayed.

**Common Data Model:** (CDM), IISS subsystem that describes common data application process formats, form definitions, etc. of the IISS and includes conceptual schema, external schemas, internal schemas, and schema transformation operators.

**Computer Program Configuration Item:** (CPCI), an aggregation of computer programs or any of their discrete portions, which satisfies an end-use function.

**Conceptual Schema:** (CS), the standard definition used for all data in the CDM. It is based on IDEF1 information modelling.

**Current Cursor Position:** the position of the cursor before an edit command or function is issued in the text editor.

**Cursor Position:** the position of the cursor after any command is issued.
Device Drivers: (DD), software modules written to handle I/O for a specific kind of terminal. The modules map terminal specific commands and data to a neutral format. Device Drivers are part of the UI Virtual Terminal.

Display List: is similar to the open list, except that it contains only those forms that have been added to the screen and are currently displayed on the screen.

Display Size: the number of lines used in the edit area.

Extended Binary Coded Decimal Interchange Code: (EBCDIC), the character set used by a few computer vendors (notably IBM) instead of ASCII.

External Schema: (ES), an application's view of the CDM's conceptual schema.

Field: two dimensional space on a terminal screen.

Field Pointer: indicates the ITEM which contains the current cursor position.

Form: structured view which may be imposed on windows or other forms. A form is composed of fields. These fields may be defined as forms, items, and windows.

Form Definition: (FD), forms definition language after compilation. It is read at runtime by the Form Processor.

Forms Definition Language: (FDL), the language in which electronic forms are defined.

Forms Driven Form Editor: (FDFE), subset of the FE which consists of a forms driven application used to create Form Definition files interactively.

Form Editor: (FE), subset of the IISS User Interface that is used to create definitions of forms. The FE consists of the Forms Driven Form Editor and the Forms Language Compiler.

Form Hierarchy: a graphic representation of the way in which forms, items and windows are related to their parent form.
Forms Language Compiler: (FLAN), subset of the FE that consists of a batch process that accepts a series of forms definition language statements and produces form definition files as output.

Form Processor: (FP), subset of the IISS User Interface that consists of a set of callable execution time routines available to an application program for form processing.

Form Processor Text Editor: (FPTE), subset of the Form Processor that consists of software modules that provide text editing capabilities to all users of applications that use the Form Processor.

Integrated Information Support System: (IISS), a test computing environment used to investigate, demonstrate and test the concepts of information management and information integration in the context of Aerospace Manufacturing. The IISS addresses the problems of integration of data resident on heterogeneous data bases supported by heterogeneous computers interconnected via a Local Area Network.

Item: non-decomposable area of a form in which hard-coded descriptive text may be placed and the only defined areas where user data may be input/output.

Logical Device: a conceptual device which to an application is indistinguishable from a physical device and is then mapped to part or all of a physical device.

Message: descriptive text which may be returned in the standard message line on the terminal screen. They are used to warn of errors or provide other user information.

Message Line: a line on the terminal screen that is used to display messages.

Network Transaction Manager: (NTM). IISS subsystem that performs the coordination, communication and housekeeping functions required to integrate the Application Processes and System Services resident on the various hosts into a cohesive system.

Open List: a list of all the forms that have been and are currently open for an application process.
Operating System: (OS), software supplied with a computer which allows it to supervise its own operations and manage access to hardware facilities such as memory and peripherals.

Page: instance of forms in windows that are created whenever a form is added to a window.

Paging and Scrolling: a method which allows a form to contain more data than can be displayed with provisions for viewing any portion of the data buffer.

Physical Device: a hardware terminal.

Presentation Schema: (PS), may be equivalent to a form. It is the view presented to the user of the application.

Previous Cursor Position: the position of the cursor when the previous edit command was issued.

Qualified Name: the name of a form, item or window preceded by the hierarchy path so that it is uniquely identified.

Report Definition Language: an extension of the Forms Definition Language that includes retrieval and calculation of database information and is used to define reports.

Subform: a form that is used within another form.

User Data: data which is either input by the user or output by the application programs to items.

User Interface: (UI), IISS subsystem that controls the user's terminal and interfaces with the rest of the system. The UI consists of two major subsystems: the User Interface Development System (UIDS) and the User Interface Management System (UIMS).

User Interface Development System: (UIDS), collection of IISS User Interface subsystems that are used by applications programmers as they develop IISS applications. The UIDS includes the Form Editor and the Application Generator.

User Interface Management System: (UIMS), the runtime UI. It consists of the Form Processor, Virtual Terminal, Application Interface, the User Interface Services and the Text Editor.
User Interface Monitor: (UIM), part of the Form Processor that handles messaging between the NTM and the UI. It also provides authorization checks and initiates applications.

User Interface/Virtual Terminal Interface: (UI/VTI), another name for the User Interface.

Virtual Terminal: (VT), subset of the IISS User Interface that performs the interfacing between different terminals and the UI. This is done by defining a specific set of terminal features and protocols which must be supported by the UI software which constitutes the virtual terminal definition. Specific terminals are then mapped against the virtual terminal software by specific software modules written for each type of real terminal supported.

Virtual Terminal Interface (VTI), the callable interface to the VT.

Window: dynamic area of a terminal screen on which predefined forms may be placed at run time.

Window Manager: a facility which allows the following to be manipulated: size and location of windows, the device on which an application is running, the position of a form within a window. It is part of the Form Processor.
3.1 Structural Description

The overall structure of the Form Processor is based on a User Interface Monitor which interprets the Application Interface messages in order to call the appropriate Form Processor routine. All the FP callable routines are at the same level in the hierarchical structure of the FP CPCI.

3.2 Functional Flow

Figure 3-1 is a data flow diagram of the Form Processor.

![Diagram of Form Processor Data Flow]

Figure 3-1 Form Processor Data Flow
3.3 Interfaces

The FP interfaces with the NTM through its UIM, with the AI through its UIM and callable routines, and with the VT through the VT Form Processor callable routines. In addition, two different methods of interfacing to an AP are supported: stand alone, when the AP may link directly to the FP and no NTM is being used, or the IISS environment, when the AP may link to the Application interface (AI) routines. In either environment, the application programs use the exact same interface to the FP. Linking to the FO directly is simpler and more efficient than using the AI but does not support the use of an NTM; direct linking is most useful for testing purposes.

The UIM part of the FP only exists when the NTM is being used. The UIM receives the message formatted by the AI and translates it into the appropriate FP callable routine to permit the sending or receiving of the forms. The FP routines then interface with the VT by translating an application request into the appropriate VT command when input/output is necessary.
Figure 3.2 FP Stand Alone (non IISS environment)
3.3.1 Application

The FP interface for IISS applications is the set of callable execution time routines available for an application program for form processing. These routines are defined in the IISS Form Processor User's Manual (UM 620144200B). The FP routines allow application programs and their users to communicate through predefined forms on a terminal. Again the application may directly interface with the FP through the FP routines or through the AI routines. In either case, the calling sequence is exactly the same.
3.3.2 Virtual Terminal

The FP interfaces with the Virtual Terminal (VT) by means of using the VT callable routines. Use of these routines is only necessary when initializing the FP (INITFP), terminating the FP (TERMFP), and outputting data to and receiving data from the terminal (OISCR, OUTSCR).

3.3.3 Forms Definition Language

The FP interfaces with the FDL by use of the Forms Definition File. This file contains the binary definition of the forms that the FP may use. It simply reads in a form by form name once an Open Form request is issued for a given form.

3.4 Program Interrupts

This section does not apply to the detailed design of the Form Processor.

3.5 Timing and Sequencing Description

Timing and sequencing for the control logic involved in referencing each CPC of the Form Processor is based on the sending of AI messages by application programs and the delivery of these messages through the NTM to the UIM of the FP. These messages are processed on a first come, first processed basis.

3.6 Special Control Features

The detailed design of the Form Processor does not include any special control features as defined in the ICAM Documentation Standards manual.

3.7 Storage Allocation

The Form Processor executable is 423 blocks. The FP allocates memory for form elements at run time. The amount of memory used depends upon the number of open forms and the number of fields on these forms.

3.7.1 Data Base Definition

Section 3.2.3 of the Form Processor Development Specification (DS 620144200B) describes the FP internal data structures.
3.7.1.1 File Descriptions

Form Definition files are the only external data used by the FP.

1. FILE NAME: formname.FD - Form Definition file. A complete description of the Form Definition file which is a binary file is contained in Appendix B of the Forms Language Compiler Development Specification (DS 620144401B). The name of this file is dependent upon the form it describes.

PURPOSE: This file contains information about the structure and attributes of a form that is used at run time by the FP.

DECLARATION:

typedef struct /* version number record */
{
    char rectyp; /* '1' */
    int vernum; /* current version number (2) */
    char linefeed;
} VERREC;

typedef struct /* form record */
{
    char form_name[10]; /* form name */
    char background[10]; /* background name */
    short row; /* starting row */
    short col; /* starting col */
    short width; /* width */
    short depth; /* depth */
    short n_txtflds; /* number of text fields */
    short n_datflds; /* number of data fields */
    short s_txtbuf; /* size of the text buffer */
    short s_defbuf; /* size of the default buffer */
    char linefeed;
} FRMREC;

typedef struct /* text record */
{
    short row; /* starting row */
    short col; /* starting col */
    short len; /* total length */
    char linefeed;
} TXTREC;

3-6
typedef struct /* field record */
{
    char fld_name[10]; /* field name */
    char fld_type; /* field type (F, I, W, A) */
    short row; /* starting row */
    short col; /* starting col */
    short width; /* field width */
    short depth; /* field depth */
    int min_value; /* minimum value (if any) */
    int max_value; /* maximum value (if any) */
    char helpline[80]; /* help text */
    char disp_att[10]; /* display attribute */
    short n_formats; /* number of formats */
    char format[12][21]; /* format strings */
    short n_arydefs; /* number of dimensions */
    struct /* dimension specification */
    {
        char dir; /* repeat direction (H, V) */
        short cnt; /* actual repeat count */
        short sp; /* number of spaces between repetitions */
        short dsp_size; /* display repeat count */
    } array_def[3];
    char linefeed;
} FLDREC;

typedef struct /* run time relative positioning info */

    POS posnod;
    NAME mynam, hnam, vnam;
} RELREC;

3.8 Object Code Creation

The FP routines were compiled with a C compiler developed by Interactive Software under VAX/VMS. The source is portable to other compilers on machines such as the IBM.

3.9 Adaptation Data

The FP source can be compiled using any UNIX version 7 compatible C compiler.

3.10 Detailed Design Description
3.10.1 Main Program List

The following is a list of all "Main Programs" which are modules that are not called by any other module being documented here. These modules are either program entry points or, if they are hooked into another set of programs via subroutine calls, they are the points the external programs can call and therefore enter through. To differentiate between the two types of entry points, look at the individual Module Documentation (section 3.10.8) and look at Module Type for each of the Main Program modules listed. Note whether the routine is a Program, Subroutine, or Function. If it is a Program, it is truly a main program entry point. If not, then it is merely called by other programs not being documented here.
<table>
<thead>
<tr>
<th>Module Name</th>
<th>Purpose</th>
</tr>
</thead>
<tbody>
<tr>
<td>GARPOS</td>
<td>GET ARRAY OFFSET POSITION OF FIELD</td>
</tr>
<tr>
<td>MONITR/MAIN</td>
<td>MAIN MODULE FOR MONITOR/UIS/FP PROCESS</td>
</tr>
<tr>
<td>PRNNDSP</td>
<td>PRINT DISPLAY LIST</td>
</tr>
<tr>
<td>PRNOPEN</td>
<td>PRINT OPEN LIST</td>
</tr>
<tr>
<td>PRNUID</td>
<td>PRINT UID</td>
</tr>
<tr>
<td>PRNUSR</td>
<td>PRINT USER</td>
</tr>
</tbody>
</table>
3.10.2 Module List

The following is a list of all the modules being documented here along with their purpose. Each module has a unique name, no matter what language it was written in.
### FORM PROCESSOR Module List

<table>
<thead>
<tr>
<th>Module Name</th>
<th>Purpose</th>
</tr>
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<tbody>
<tr>
<td>ACRPOS</td>
<td>ABSOLUTIZE CURSOR POSITION OF FIELD</td>
</tr>
<tr>
<td>ADDELM</td>
<td>ADD ELEMENT</td>
</tr>
<tr>
<td>ADDFRM</td>
<td>ADD FORM TO WINDOW</td>
</tr>
<tr>
<td>ADJSTR</td>
<td>ADJUST FORM PROCESSOR STRUCTURE</td>
</tr>
<tr>
<td>CALLFP</td>
<td>CALL FP ROUTINES</td>
</tr>
<tr>
<td>CANITM</td>
<td>CANONICALIZE ITEM</td>
</tr>
<tr>
<td>CHGLDV</td>
<td>CHANGE LOGICAL DEVICE</td>
</tr>
<tr>
<td>CHGPRC</td>
<td>CHANGE PRECEDENCE OF WINDOW OR LOGICAL DEVICE</td>
</tr>
<tr>
<td>CLSFRM</td>
<td>CLOSE FORM</td>
</tr>
<tr>
<td>CLSLDV</td>
<td>CLOSE LOGICAL DEVICE</td>
</tr>
<tr>
<td>CMPFLD</td>
<td>COMPUTE FIELD</td>
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<tr>
<td>CMPFLD/EVAL</td>
<td>EVALUATE FIELD EXPRESSION</td>
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<tr>
<td>COPFLD</td>
<td>COPY FIELD</td>
</tr>
<tr>
<td>COPFLD/CPYFLD</td>
<td>INTERNAL COPY FIELD</td>
</tr>
<tr>
<td>COPFRM</td>
<td>COPY FORM</td>
</tr>
<tr>
<td>CURPOS</td>
<td>GET CURSOR POSITION</td>
</tr>
<tr>
<td>CURPOS/FNDCP</td>
<td>FIND CURSOR POSITION</td>
</tr>
<tr>
<td>DBCFNC</td>
<td>CHECK FUNCTION</td>
</tr>
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<td>DBCROL</td>
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<td>DELFLD</td>
<td>DELETE FIELD</td>
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# FORM PROCESSOR Module List

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<tr>
<th>Module Name</th>
<th>Purpose</th>
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<tr>
<td>DELFLD/DELEXP</td>
<td>DELETE EXPRESSION</td>
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<td>ESCPY</td>
<td>EXTERNAL STRING COPY</td>
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<td>FIND FIELD</td>
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<td>FNDMSG</td>
<td>FIND MESSAGE</td>
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<tr>
<td>FNDMSG/CODSCH</td>
<td>CODE SEARCH</td>
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<tr>
<td>FNDMSG/OUMSGF</td>
<td>OPEN USER MESSAGE FILE</td>
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<tr>
<td>FNFPWN</td>
<td>FIND FORM PROCESSOR WINDOW</td>
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<tr>
<td>FUISWN</td>
<td>FIND UIS WINDOW</td>
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<tr>
<td>GARPOS</td>
<td>GET ARRAY OFFSET POSITION OF FIELD</td>
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<tr>
<td>GATDEF</td>
<td>GET ATTRIBUTE DEFINITION</td>
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<tr>
<td>GDATA</td>
<td>GET DATA</td>
</tr>
<tr>
<td>GDATA/GETBUF</td>
<td>GET BUFFER</td>
</tr>
<tr>
<td>GDATLN</td>
<td>GET DATA LENGTH</td>
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<tr>
<td>GDATLN/GBUFLN</td>
<td>GET BUFFER LENGTH</td>
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<tr>
<td>GDVINP</td>
<td>GET DEVICE INPUT</td>
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<tr>
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<td>GET ATTRIBUTE</td>
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<td>GETBAK</td>
<td>GET BACKGROUND ATTRIBUTE</td>
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<td>GETCUR</td>
<td>GET CURSOR POSITION</td>
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<td>GETCUR/CONCAT</td>
<td>CONCATENATE STRING TO CURRENT NAME</td>
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<td>GOPPTR</td>
<td>GET OPEN FROM POINTER</td>
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# FORM PROCESSOR Module List

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<td>INITVT</td>
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<td>INQUIRE LOGICAL DEVICE</td>
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<td>INSCR</td>
<td>INPUT SCREEN</td>
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<td>MABSAT</td>
<td>MAP ABSOLUTE ATTRIBUTE</td>
</tr>
<tr>
<td>MAKAP</td>
<td>MAKE APLICATION STRUCTURE</td>
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<td>MAKFLD</td>
<td>MAKE FIELD</td>
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<tr>
<td>MAKFPD</td>
<td>MAKE FORM PROCESSOR DATA (LOGICAL DEVICE STRUCTURE)</td>
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<tr>
<td>MAKPD</td>
<td>MAKE PHYSICAL DEVICE STRUCTURE</td>
</tr>
<tr>
<td>MAKUSR</td>
<td>MAKE USER</td>
</tr>
<tr>
<td>MONITR/GETPD</td>
<td>GET PHYSICAL DEVICE</td>
</tr>
<tr>
<td>MONITR/MAIN</td>
<td>MAIN MODULE FOR MONITOR/UIS/FP PROCESS</td>
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<tr>
<td>OISCR/ADDCMD</td>
<td>ADD COMMAND TO BUFFER</td>
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<tr>
<td>OISCR/CMPALL</td>
<td>COMPUTE ALL CALCULATED FIELDS</td>
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<td>OISCR/CNGMSG</td>
<td>CHECK FOR AND PROCESS CHANGE MESSAGE REQUESTS</td>
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<td>OISCR/DSPSCR</td>
<td>DISPLAY SCREEN</td>
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<td>OISCR/EVTBUF</td>
<td>EMPTY VTI BUFFER</td>
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<td>OISCR/FVTBUF</td>
<td>FILL VTI BUFFER</td>
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<td>OISCR/GATINF</td>
<td>GET ATTRIBUTE INFO</td>
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<tr>
<td>OISCR/PROCFLD</td>
<td>PROCESS FIELD</td>
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<td>Module Name</td>
<td>Purpose</td>
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<tr>
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<tr>
<td>OISCR/PROCWIN</td>
<td>PROCESS WINDOW</td>
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<td>OISCR/RSTINP</td>
<td>RESET INPUT FLAGS</td>
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<td>OISCR/RSTMAT</td>
<td>RESET TEMPOARY ATTRIBUTES</td>
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<td>OISCR/SETWIN</td>
<td>SET WINDOW</td>
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<tr>
<td>ONWISC</td>
<td>OUTPUT (NO WAIT) / INPUT SCREEN</td>
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<td>OPEN FORM</td>
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<td>OPNFRM/BDBUFF</td>
<td>BUILD DEFAULT BUFFER</td>
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<td>OPNFRM/BFLDDB</td>
<td>BUILD FIELD DEFAULT BUFFER</td>
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<td>OPNFRM/BRPNOD</td>
<td>BUILD RELATIVE POSITION NODE</td>
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<td>OPNFRM/BTBUFF</td>
<td>BUILD TEXT BUFFER</td>
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<td>OPNFRM/PARY</td>
<td>PROCESS ARRAY</td>
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<td>OPNFRM/PDREC</td>
<td>PROCESS FIELD RECORD</td>
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<td>OPNFRM/PFREC</td>
<td>PROCESS FORM RECORD</td>
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<td>OPNFRM/PFRM</td>
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<td>OPNFRM/PITM</td>
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<tr>
<td>OPNFRM/PTREC</td>
<td>PROCESS TEXT RECORD</td>
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<td>OPNFRM/PWIN</td>
<td>PROCESS WINDOW</td>
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<tr>
<td>OPNLTV</td>
<td>OPEN LOGICAL DEVICE</td>
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<td>OUTSCR</td>
<td>OUTPUT SCREEN</td>
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<td>PARFQUN</td>
<td>PARSE FULLY QUALIFIED NAME</td>
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<td>PDATA</td>
<td>PUT FORM DATA</td>
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FORM PROCESSOR Module List

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<tr>
<th>Module Name</th>
<th>Purpose</th>
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<tbody>
<tr>
<td>PDATA/PUTBUF</td>
<td>PUT BUFFER</td>
</tr>
<tr>
<td>PDVOTP</td>
<td>PUT DEVICE OUTPUT</td>
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<tr>
<td>PMSGLC</td>
<td>PUT MESSAGE LINE CODE</td>
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<td>PMSGLS</td>
<td>PUT MESSAGE LINE STRING</td>
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<td>POSCUR</td>
<td>POSITION CURSOR</td>
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<tr>
<td>POSCUR FNFITM</td>
<td>FIND FIRST ITEM OF FIELD</td>
</tr>
<tr>
<td>PRNAP</td>
<td>PRINT APLICATION</td>
</tr>
<tr>
<td>PRNDSP</td>
<td>PRINT DISPLAY LIST</td>
</tr>
<tr>
<td>PRNFLD</td>
<td>PRINT FIELD</td>
</tr>
<tr>
<td>PRNOPN</td>
<td>PRINT OPEN LIST</td>
</tr>
<tr>
<td>PRNPD</td>
<td>PRINT PHYSICAL DEVICE</td>
</tr>
<tr>
<td>PRNUID</td>
<td>PRINT UID</td>
</tr>
<tr>
<td>PRNUSR</td>
<td>PRINT USER</td>
</tr>
<tr>
<td>PTHPTR</td>
<td>GET PATH POINTER</td>
</tr>
<tr>
<td>PTHPTR ARRAY</td>
<td>PROCESS ARRAY</td>
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<tr>
<td>PTHPTR FIELD</td>
<td>MATCH FIELD</td>
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<tr>
<td>PTHPTR FORM</td>
<td>PROCESS FORM</td>
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<tr>
<td>PTHPTR FOUND</td>
<td>HAS ANYTHING BEEN FOUND?</td>
</tr>
<tr>
<td>PTHPTR ITEM</td>
<td>PROCESS ITEM</td>
</tr>
<tr>
<td>PTHPTR WINDOW</td>
<td>PROCESS WINDOW</td>
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<tr>
<td>PUTATT</td>
<td>PUT ATTRIBUTES</td>
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</table>
### FORM PROCESSOR Module List

<table>
<thead>
<tr>
<th>Module Name</th>
<th>Purpose</th>
</tr>
</thead>
<tbody>
<tr>
<td>PUTATT/AABSAT</td>
<td>ATTRIBUTE ABSOLUTE SET ATTRIBUTE</td>
</tr>
<tr>
<td>PUTBAK</td>
<td>PUT BACKGROUND ATTRIBUTES</td>
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<td>PUTCUR</td>
<td>PUT CURSOR</td>
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<tr>
<td>PUTLOC</td>
<td>PUT LOCATION</td>
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<tr>
<td>RMVAP</td>
<td>REMOVE APPLICATION</td>
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<td>RMVFDPD</td>
<td>REMOVE FORM PROCESSOR DATA STRUCTURE</td>
</tr>
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<td>RMVPAG</td>
<td>REMOVE PAGE</td>
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<td>RMVPD</td>
<td>REMOVE PHYSICAL DEVICE DATA STRUCTURE</td>
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<td>RPLFRM</td>
<td>REPLACE FORM</td>
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<td>RSVATT</td>
<td>RESOLVE ATTRIBUTE</td>
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<td>RSVATT RSVRST</td>
<td>RESOLVE REST</td>
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<td>RSVEXP</td>
<td>RESOLVE EXPRESSIONS</td>
</tr>
<tr>
<td>RSVEXP BLDEXP</td>
<td>BUILD EXPRESSION TREE</td>
</tr>
<tr>
<td>SFPDAP</td>
<td>SET FORM PROCESSOR DATA STRUCTURE FOR APPLICATION</td>
</tr>
<tr>
<td>STUPFP</td>
<td>SET UP FORM PROCESSOR DATA STRUCTURES</td>
</tr>
<tr>
<td>SYSMSG</td>
<td>SYSTEM MESSAGE ROUTINE</td>
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<td>TERMVT</td>
<td>TERMINATE VIRTUAL TERMINAL INTERFACE</td>
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<tr>
<td>TRMDRV</td>
<td>TERMINATE DEVICE DRIVER</td>
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<td>UIS</td>
<td>USR INTERFACE SERVICES</td>
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## FORM PROCESSOR Module List

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<th>Module Name</th>
<th>Purpose</th>
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<tbody>
<tr>
<td>UIS FLWINF</td>
<td>FILL WINDOW INFORMATION</td>
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<td>UIS FLWNST</td>
<td>FILL WINDOW MANAGER STRUCTURE</td>
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<tr>
<td>UIS PRCINP</td>
<td>PROCESS INPUT</td>
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<tr>
<td>UIS PRCWND</td>
<td>PROCESS WINDOW</td>
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<tr>
<td>UIS STRTAP</td>
<td>START APPLICATION</td>
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<td>UIS STRTPD</td>
<td>START PHYSICAL DEVICE</td>
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<tr>
<td>ULKFPD</td>
<td>UNLINKK FPD</td>
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3.10.3 External Routines List

The following is a list of all routines or functions not documented here that are called by modules that are documented here. The first caller, in alphabetical order, is listed as well. The specification in which any module is documented may be found in the Module Documentation Index (Document Number CM 620100001). See section 3.10.6 for a list of the modules that call each of these external routines.
<table>
<thead>
<tr>
<th>Module Name</th>
<th>First User</th>
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</thead>
<tbody>
<tr>
<td>ABORT</td>
<td>OPNFRM/BRPNOD</td>
</tr>
<tr>
<td>ABS</td>
<td>OISCR/PROCWIN</td>
</tr>
<tr>
<td>ATOI</td>
<td>MAKAP</td>
</tr>
<tr>
<td>BLD bdsm</td>
<td>MONITR/MAIN</td>
</tr>
<tr>
<td>BLEN</td>
<td>COPFLD/CPYFLD</td>
</tr>
<tr>
<td>CALLOC</td>
<td>MAKAP</td>
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<td>CBIT</td>
<td>DELFLD</td>
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<tr>
<td>CB PTR</td>
<td>PDATA/PUTBUF</td>
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<tr>
<td>CFREE</td>
<td>MAKAP</td>
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## FORM PROCESSOR External Routines List

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<td>UIS/PRCPINP</td>
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<td>OPNFRM/PWIN</td>
</tr>
<tr>
<td>STRCAT</td>
<td>OISCR/PROCFLD</td>
</tr>
<tr>
<td>STRCHR</td>
<td>PARFQN</td>
</tr>
<tr>
<td>STRCMP</td>
<td>MONITR/GETPD</td>
</tr>
<tr>
<td>STRCPY</td>
<td>MAKFLD</td>
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<tr>
<td>STRLEN</td>
<td>OISCR/FVTBUF</td>
</tr>
<tr>
<td>STRNCOMP</td>
<td>FNDMSG</td>
</tr>
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<td>ESCPY</td>
</tr>
<tr>
<td>STRNLOC</td>
<td>CANITM</td>
</tr>
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<td>STRNUPC</td>
<td>CANITM</td>
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<td>PARFQN</td>
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<tr>
<td>STRUPC</td>
<td>COPFRM</td>
</tr>
<tr>
<td>TIME</td>
<td>OISCR/DSPSCR</td>
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<td>TOUPPER</td>
<td>PTHPTR</td>
</tr>
<tr>
<td>TRMNAT</td>
<td>MONITR/Main</td>
</tr>
</tbody>
</table>

3-20
3.10.4 Include File List

The following is a list of all include files called in by modules being documented here. Each include file has a unique name regardless of the language being used. The purpose of each include file is listed as well. A more complete description of each include file is given in section 3.10.9. The purpose listed is the one that is in the source code of the include file.

A purpose of "***** PURPOSE NOT FOUND BY STRIPPER *****" indicates that a purpose statement was not written into the include file itself. The most common reason for this is that the include file comes from system libraries that were not developed by the project, such as 'C' libraries that are provided with the 'C' compiler.

See section 3.10.6 for a set of lists which show all the modules which call in each of these include files.
FORM PROCESSOR Include File List

<table>
<thead>
<tr>
<th>File Name</th>
<th>Purpose</th>
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</thead>
<tbody>
<tr>
<td>BITS</td>
<td>INCLUDE FILE FOR BIT MANIPULATION ROUTINES</td>
</tr>
<tr>
<td>CICODE</td>
<td>Command Interpreter CODEs</td>
</tr>
<tr>
<td>CTLCHR</td>
<td>CONTROL CHARACTERS</td>
</tr>
<tr>
<td>CTYPE</td>
<td>**** PURPOSE NOT FOUND BY STRIPPER ****</td>
</tr>
<tr>
<td>CURSORI</td>
<td>CURSOR description</td>
</tr>
<tr>
<td>DBASEI</td>
<td>DATABASE INTERFACE</td>
</tr>
<tr>
<td>FFFV2</td>
<td>FORM FILE FORMAT - VERSION 2</td>
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<tr>
<td>FPCODE</td>
<td>FORM PROCESSOR RETURN CODES</td>
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<tr>
<td>FPD</td>
<td>FORM PROCESSOR DATA</td>
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<tr>
<td>FPDINI</td>
<td>FPD INITIALIZATION</td>
</tr>
<tr>
<td>FPEMSG</td>
<td>FORM PROCESSOR ERROR MESSAGES</td>
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<tr>
<td>FPPARM</td>
<td>FORM PROCESSOR PARAMETERS</td>
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<tr>
<td>FUNCTS</td>
<td>FUNCTION DEFINITIONS</td>
</tr>
<tr>
<td>NTM</td>
<td>NTM INTERFACE INCLUDE FILE</td>
</tr>
<tr>
<td>ORACLE</td>
<td>data declarations for programs that access ORACLE</td>
</tr>
<tr>
<td>ORCODE</td>
<td>ORacle CODEs</td>
</tr>
<tr>
<td>STDIO</td>
<td>**** PURPOSE NOT FOUND BY STRIPPER ****</td>
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<tr>
<td>STDTYP</td>
<td>STANDARD TYPE DEFINITIONS</td>
</tr>
<tr>
<td>TIME</td>
<td>**** PURPOSE NOT FOUND BY STRIPPER ****</td>
</tr>
<tr>
<td>UISFM</td>
<td>UIS FORM</td>
</tr>
<tr>
<td>VTICOM</td>
<td>VTI COMMUNICATION DEFINITIONS</td>
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</table>
3.10.5 Where Include File Used List

The following lists each include file from 3.10.4 and all the modules documented in this specification which include them. The purpose of each module is listed as well.
FORM PROCESSOR Where-include-file-used List

<table>
<thead>
<tr>
<th>Include File</th>
<th>Module Name</th>
<th>Module Purpose</th>
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<tbody>
<tr>
<td>BITS</td>
<td>COPFLD</td>
<td>COPY FIELD</td>
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<td>COPFLD/CP</td>
<td>INTERNAL COPY FIELD</td>
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<td>DELFLD</td>
<td>DELETE FIELD</td>
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<td></td>
<td>DELFLD/DE</td>
<td>DELETE EXPRESSION</td>
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<td>CICODE</td>
<td>DBCFNC</td>
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<td>DBCROL</td>
<td>CHECK ROLE</td>
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<tr>
<td>CTLCHR</td>
<td>GDVINP</td>
<td>GET DEVICE INPUT</td>
</tr>
<tr>
<td></td>
<td>INSCR</td>
<td>INPUT SCREEN</td>
</tr>
<tr>
<td></td>
<td>MAKUSR</td>
<td>MAKE USER</td>
</tr>
<tr>
<td></td>
<td>MONITR/GE</td>
<td>GET PHYSICAL DEVICE</td>
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<tr>
<td></td>
<td>MONITR/MA</td>
<td>MAIN MODULE FOR MONITOR/UIS/FP PROCESS</td>
</tr>
<tr>
<td></td>
<td>OISCR/ADD</td>
<td>ADD COMMAND TO BUFFER</td>
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<tr>
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<td>OISCR/CMP</td>
<td>COMPUTE ALL CALCULATED FIELDS</td>
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<tr>
<td></td>
<td>OISCR/CNG</td>
<td>CHECK FOR AND PROCESS CHANGE MESSAGE REQUESTS</td>
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<tr>
<td></td>
<td>OISCR/DSP</td>
<td>DISPLAY SCREEN</td>
</tr>
<tr>
<td></td>
<td>OISCR/EVT</td>
<td>EMPTY VTI BUFFER</td>
</tr>
<tr>
<td></td>
<td>OISCR/FVT</td>
<td>FILL VTI BUFFER</td>
</tr>
<tr>
<td></td>
<td>OISCR/GAT</td>
<td>GET ATTRIBUTE INFO</td>
</tr>
<tr>
<td></td>
<td>OISCR/PRO</td>
<td>PROCESS FIELD</td>
</tr>
<tr>
<td></td>
<td>OISCR/PRO</td>
<td>PROCESS WINDOW</td>
</tr>
<tr>
<td></td>
<td>OISCR/RST</td>
<td>RESET INPUT FLAGS</td>
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<td></td>
<td>OISCR/RST</td>
<td>RESET TEMPORARY ATTRIBUTES</td>
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<td></td>
<td>OISCR/SET</td>
<td>SET WINDOW</td>
</tr>
<tr>
<td></td>
<td>ONWISC</td>
<td>OUTPUT (NO WAIT) / INPUT SCREEN</td>
</tr>
<tr>
<td></td>
<td>OUTSCR</td>
<td>OUTPUT SCREEN</td>
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<td>RMVFPD</td>
<td>REMOVE FORM PROCESSOR DATA STRUCTURE</td>
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<td>UIS</td>
<td>USR INTERFACE SERVICES</td>
</tr>
<tr>
<td></td>
<td>UIS/FLWIN</td>
<td>FILL WINDOW INFORMATION</td>
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FORM PROCESSOR Where-include-file-used List

<table>
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<tr>
<th>Include File</th>
<th>Module Name</th>
<th>Module Purpose</th>
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<tr>
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<td>-------------</td>
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UIS/FLWNS  FILL WINDOW MANAGER STRUCTURE
UIS/PRCIN  PROCESS INPUT
UIS/PRCWN  PROCESS WINDOW
UIS/STRTA  START APPLICATION
UIS/STRTP  START PHYSICAL DEVICE

CTYPE

CMPFLD    COMPUTE FIELD
CMPFLD/EV EVALUATE FIELD EXPRESSION
INSCR     INPUT SCREEN
OISCR/ADD ADD COMMAND TO BUFFER
OISCR/CMP COMPUTE ALL CALCULATED FIELDS
OISCR/CNG CHECK FOR AND PROCESS CHANGE MESSAGE REQUESTS
OISCR/DSP DISPLAY SCREEN
OISCR/EVT EMPTY VTI BUFFER
OISCR/FVT FILL VTI BUFFER
OISCR/GAT GET ATTRIBUTE INFO
OISCR/PRO PROCESS FIELD
OISCR/PRO PROCESS WINDOW
OISCR/RST RESET INPUT FLAGS
OISCR/RST RESET TEMPORARY ATTRIBUTES
OISCR/SET SET WINDOW
ONWISC     OUTPUT (NO WAIT) / INPUT SCREEN
OPNFRM     OPEN FORM
OPNFRM/BD  BUILD DEFAULT BUFFER
OPNFRM/BF  BUILD FIELD DEFAULT BUFFER
OPNFRM/BR  BUILD RELATIVE POSITION NODE
OPNFRM/BT  BUILD TEXT BUFFER
OPNFRM/PA  PROCESS ARRAY
OPNFRM/PD  PROCESS FIELD RECORD
OPNFRM/PF  PROCESS FORM RECORD
OPNFRM/PF  PROCESS FORM
OPNFRM/PI  PROCESS ITEM
OPNFRM/PT  PROCESS TEXT RECORD
OPNFRM/PW  PROCESS WINDOW
OUTSCR     OUTPUT SCREEN
FORM PROCESSOR Where-include-file-used List

<table>
<thead>
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<th>Include File</th>
<th>Module Name</th>
<th>Module Purpose</th>
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<td>PDATA</td>
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<td>BUFFER</td>
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<td>PUT</td>
<td>MESSAGE LINE STRING</td>
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<td>PATH POINTER</td>
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<td>PTHPTR/AR</td>
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<td>ARRAY</td>
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<td>FIELD</td>
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<td>FORM</td>
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<td>PROCESS</td>
<td>ITEM</td>
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<td>PTHPTR/WI</td>
<td>PROCESS</td>
<td>WINDOW</td>
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<td>RESOLVE</td>
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CURSORI

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DBASEI

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<td>MONITR/GE</td>
<td>GET PHYSICAL DEVICE</td>
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<td>MONITR/MA</td>
<td>MAIN MODULE FOR MONITOR/UIS/FP PROCESS</td>
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<td>UIS</td>
<td>USR INTERFACE SERVICES</td>
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<tr>
<td>UIS/FLWIN</td>
<td>FILL WINDOW INFORMATION</td>
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<td>UIS/FLWNS</td>
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<td>UIS/PRCIN</td>
<td>PROCESS INPUT</td>
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<td>UIS/PRCWN</td>
<td>PROCESS WINDOW</td>
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<tr>
<td>UIS/STRTA</td>
<td>START APPLICATION</td>
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<tr>
<td>UIS/STRTP</td>
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FFFV2

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FORM PROCESSOR Where-file-used List

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<th>Module Purpose</th>
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<td>OPNFRM/BF</td>
<td>BUILD FIELD DEFAULT BUFFER</td>
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<td>OPNFRM/BR</td>
<td>BUILD RELATIVE POSITION NODE</td>
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<tr>
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<td>OPNFRM/BT</td>
<td>BUILD TEXT BUFFER</td>
</tr>
<tr>
<td></td>
<td>OPNFRM/PA</td>
<td>PROCESS ARRAY</td>
</tr>
<tr>
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<td>OPNFRM/PD</td>
<td>PROCESS FIELD RECORD</td>
</tr>
<tr>
<td></td>
<td>OPNFRM/PF</td>
<td>PROCESS FORM RECORD</td>
</tr>
<tr>
<td></td>
<td>OPNFRM/PF</td>
<td>PROCESS FORM</td>
</tr>
<tr>
<td></td>
<td>OPNFRM/PI</td>
<td>PROCESS ITEM</td>
</tr>
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<td></td>
<td>OPNFRM/PT</td>
<td>PROCESS TEXT RECORD</td>
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FPCODE

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<td>CALLFP</td>
<td>CALL FP ROUTINES</td>
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<td>CHANGE LOGICAL DEVICE</td>
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<td>CLOSE FORM</td>
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<td>GET BUFFER LENGTH</td>
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<td>GDIVINP</td>
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FORM PROCESSOR Where - include - file - used List

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<th>Include File</th>
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<th>Module Purpose</th>
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<tr>
<td>GETBAK</td>
<td>GET BACKGROUND ATTRIBUTE</td>
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<td>GET CURSOR POSITION</td>
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<td>CONCATENATE STRING TO CURRENT NAME</td>
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<td>MAKPD</td>
<td>MAKE PHYSICAL DEVICE STRUCTURE</td>
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<tr>
<td>MAKUSR</td>
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</tr>
<tr>
<td>MONITR/GE</td>
<td>GET PHYSICAL DEVICE</td>
<td></td>
</tr>
<tr>
<td>MONITR/MA</td>
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<td>OISCR/ADD</td>
<td>ADD COMMAND TO BUFFER</td>
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<td>COMPUTE ALL CALCULATED FIELDS</td>
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<td>CHECK FOR AND PROCESS CHANGE MESSAGE</td>
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<td>PROCESS FIELD</td>
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<td>OISCR/PRO</td>
<td>PROCESS WINDOW</td>
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<td>RESET INPUT FLAGS</td>
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<td>SET WINDOW</td>
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</tr>
<tr>
<td>ONWISC</td>
<td>OUTPUT (NO WAIT) / INPUT SCREEN</td>
<td></td>
</tr>
<tr>
<td>OPNFRM</td>
<td>OPEN FORM</td>
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<td>OPNFRM/BT</td>
<td>BUILD TEXT BUFFER</td>
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<td>OPNFRM/PA</td>
<td>PROCESS ARRAY</td>
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<tr>
<td>OPNFRM/PD</td>
<td>PROCESS FIELD RECORD</td>
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<td>OPNFRM/PF</td>
<td>PROCESS FORM RECORD</td>
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<td>PROCESS ITEM</td>
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3-28
FORM PROCESSOR Where-include-file-used List

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FPDINI
MONITR/GE GET PHYSICAL DEVICE
MONITR/MA MAIN MODULE FOR MONITOR/UIS/FP PROCESS

FPEMSG
FNDMSG FIND MESSAGE
FNDMSG/CO CODE SEARCH
FNDMSG/OU OPEN USER MESSAGE FILE

FPPARM
GDATA GET DATA
GDATA/GET GET BUFFER
GDATLN GET DATA LENGTH
GDATLN/GB GET BUFFER LENGTH
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FUNCTS

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### FORM PROCESSOR Where-include-file-used List

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### FORM PROCESSOR Where-include-file-used List

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### ORACLE

- **DBCFCN** CHECK FUNCTION
- **DBCROL** CHECK ROLE

### ORCODE

- **DBCFCN** CHECK FUNCTION
- **DBCROL** CHECK ROLE

### STDIO

- **FNDMSG** FIND MESSAGE
- **FNDMSG/CO** CODE SEARCH
- **FNDMSG/OU** OPEN USER MESSAGE FILE
- **GDVinp** GET DEVICE INPUT
- **INSCR** INPUT SCREEN
- **MONITR/GE** GET PHYSICAL DEVICE
- **MONITR/MA** MAIN MODULE FOR MONITOR/UIS/FP PROCESS
- **OISCR/ADD** ADD COMMAND TO BUFFER
- **OISCR/CMP** COMPUTE ALL CALCULATED FIELDS
- **OISCR/CNG** CHECK FOR AND PROCESS CHANGE MESSAGE REQUESTS
- **OISCR/DSP** DISPLAY SCREEN
- **OISCR/EVT** EMPTY VTI BUFFER
- **OISCR/FVT** FILL VTI BUFFER
- **OISCR/GAT** GET ATTRIBUTE INFO
- **OISCR/PRO** PROCESS FIELD
- **OISCR/PRO** PROCESS WINDOW
- **OISCR/RST** RESET INPUT FLAGS
- **OISCR/RST** RESET TEMPORARY ATTRIBUTES
- **OISCR/SET** SET WINDOW
- **ONWISC** OUTPUT (NO WAIT) / INPUT SCREEN
**FORM PROCESSOR Where-include-file-used List**

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**STDTYP**

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## FORM PROCESSOR Where-include-file-used List

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<td>CHECK FOR AND PROCESS CHANGE MESSAGE REQUESTS</td>
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FORM PROCESSOR Where-include-file-used List

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FORM PROCESSOR Where-file-used List

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TIME

- **CMPFLD** COMPUTE FIELD
- **CMPFLD/EV** EVALUATE FIELD EXPRESSION
- **INSCR** INPUT SCREEN
- **OISCR/ADD** ADD COMMAND TO BUFFER
- **OISCR/CMP** COMPUTE ALL CALCULATED FIELDS
- **OISCR/CNG** CHECK FOR AND PROCESS CHANGE MESSAGE REQUESTS
- **OISCR/DSP** DISPLAY SCREEN
- **OISCR/EVT** EMPTY VTI BUFFER
- **OISCR/FVT** FILL VTI BUFFER
- **OISCR/GAT** GET ATTRIBUTE INFO
- **OISCR/PRO** PROCESS FIELD
- **OISCR/PRO** PROCESS WINDOW
- **OISCR/RST** RESET TEMPORARY ATTRIBUTES
- **OISCR/SET** SET WINDOW
- **ONWISC** OUTPUT (NO WAIT) / INPUT SCREEN
- **OUTSCR** OUTPUT SCREEN

UISFM

- **UIS** USR INTERFACE SERVICES
- **UIS/FLWIN** FILL WINDOW INFORMATION
- **UIS/FLWNS** FILL WINDOW MANAGER STRUCTURE
- **UIS/PRCIN** PROCESS INPUT
- **UIS/PRCWN** PROCESS WINDOW
- **UIS/STRTA** START APPLICATION
- **UIS/STRTP** START PHYSICAL DEVICE

VTICOM

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FORM PROCESSOR Where-include-file-used List

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3.10.6 Where External Routine Used List

The following lists each external function or routine listed in 3.10.3 and all the documented modules which call it. The purpose of each module is listed as well.
## FORM PROCESSOR Where-external-routine-used List

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<td>ABS</td>
<td>ADDELM - ADD ELEMENT</td>
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<td>CURPOS/FND - FIND CURSOR POSITION</td>
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<td>OISCR/PROC - PROCESS FIELD</td>
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<td>OPNFRM/PAR - PROCESS ARRAY</td>
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<td>MAKAP - MAKE APPLICATION STRUCTURE</td>
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<td>RMVAP - REMOVE APPLICATION</td>
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<td>SYSHMSG - SYSTEM MESSAGE ROUTINE</td>
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<td>BLDCMD</td>
<td>GDVINP - GET DEVICE INPUT</td>
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<td>MAKUSR - MAKE USER</td>
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<td>GATLN/GBU - GET BUFFER LENGTH</td>
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<td>PDATA/PUTBPUT BUFFER</td>
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**CALLOC**

- **MAKAP** MAKE APPLICATION STRUCTURE
- **MAKF PD** MAKE FORM PROCESSOR DATA (LOGICAL DEVICE STRUCTURE)
- **MAKP D** MAKE PHYSICAL DEVICE STRUCTURE
- **MAKUSR** MAKE USER

**CBIT**

- **COPFLD/CPYINTERNAL COPY FIELD**
- **DELF LD** DELETE FIELD
- **RMVAP** REMOVE APPLICATION

**CBPTR**

- **CANITM** CANONICALIZE ITEM
- **CMPFLD** COMPUTE FIELD
- **CMPFLD/EVAEVALUATE FIELD EXPRESSION**
- **COPFLD/CPYINTERNAL COPY FIELD**
- **GDATA/GETBGET BUFFER**
- **OISCR/EVTBEMPTY VTI BUFFER**
- **OISCR/PROC PROCESS FIELD**
- **OISCR/RSTIRESET INPUT FLAGS**
- **PDATA/PUTBPUT BUFFER**

**CFREE**

- **MAKAP** MAKE APPLICATION STRUCTURE
- **MAKUSR** MAKE USER
- **RMVAP** REMOVE APPLICATION
- **RMVF PD** REMOVE FORM PROCESSOR DATA STRUCTURE
FORM PROCESSOR Where-external-routine-used List

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### FORM PROCESSOR Where-external-routine-used List

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### MEMSET

- CALLFP: CALL FP ROUTINES
- CANITM: CANONICALIZE ITEM
- CMPFLD: COMPUTE FIELD
- FNDMSG: FIND MESSAGE
- GDVinp: GET DEVICE INPUT
- GETATT: GET ATTRIBUTE
- GETBAK: GET BACKGROUND ATTRIBUTE
- GETCUR: GET CURSOR POSITION
- GPAGE: GET PAGE
- MONITR/MAIMAIN MODULE FOR MONITOR/UIS/FP PROCESS
- OISCR/EVTBEMPTY VTI BUFFER
- PARFQN: PARSE FULLY QUALIFIED NAME
- PDVOTP: PUT DEVICE OUTPUT
- PMSGSL: PUT MESSAGE LINE STRING
- TRMDRV: TERMINATE DEVICE DRIVER
- TRMUSR: TERMINATE USER
- UIS: USR INTERFACE SERVICES
- UIS/FLWNSTFILL WINDOW MANAGER STRUCTURE
- UIS/PRCWNDPRCESS WINDOW

### MIN

- CALLFP: CALL FP ROUTINES
- MONITR/MAIMAIN MODULE FOR MONITOR/UIS/FP PROCESS
- OISCR/PROCPROCESS FIELD
- POSCUR: POSITION CURSOR
- PTHPTR/FIEMATCH FIELD
- UIS/PRCINPPRCESS INPUT
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- **FNDMSG/CODCODE** SEARCH

- **SBIT**
  - COPFLD/CPYINTERNAL COPY FIELD
  - MAKAP MAKE APPLICATION STRUCTURE
  - STUPFP SET UP FORM PROCESSOR DATA STRUCTURES

- **SIGABT**
  - TRMUSR TERMINATE USER
  - UIS/STRTPDSTART APPLICATION
  - UIS/STRTPDSTART PHYSICAL DEVICE

- **SNDVTI**
  - CALLFP CALL FP ROUTINES

- **SPRINTF**
  - CALLFP CALL FP ROUTINES
  - CMPFLD/EVA EVALUATE FIELD EXPRESSION
  - FNDMSG FIND MESSAGE
  - FNDMSG/OMOPEN USER MESSAGE FILE
  - GETCUR GET CURSOR POSITION
  - MAKUSR MAKE USER
  - MONITR/MAIMAIN MODULE FOR MONITOR/UIS/FP PROCESS
  - OISCR/DS PSDISPLAY SCREEN
  - OISCR/FVTBFILL VTI BUFFER
  - OISCR/PROCPROCESS FIELD
  - OISCR/PROCPROCESS WINDOW
  - OPNFRM OPEN FORM
  - RMVAP REMOVE APPLICATION
  - RMVFPD REMOVE FORM PROCESSOR DATA STRUCTURE
  - UIS USR INTERFACE SERVICES
  - UIS/FLWINFFILL WINDOW INFORMATION
FORM PROCESSOR
Where-external-routine-used List

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STRASN

- COPFLD/CPYINTERNAL COPY FIELD
- MABSAT MAP ABSOLUTE ATTRIBUTE
- OISCR/EVTBEMPTY VTI BUFFER
- OISCR/GATIGET ATTRIBUTE INFO
- OPNFRM/BRPBUILD RELATIVE POSITION NODE
- OPNFRM/PWIPROCESS WINDOW
- PTHPTR GET PATH POINTER
- RMVPAG REMOVE PAGE
- RSVATT RESOLVE ATTRIBUTE
- RSVATT/RSVRESOLVE REST
- STUPFP SET UP FORM PROCESSOR DATA STRUCTURES

STRCAT

- OISCR/PROCPROCESS FIELD

STRCHR

- MONITR/MAIMAIN MODULE FOR MONITOR/UIS/FP PROCESS
- PARFQN PARSE FULLY QUALIFIED NAME
- RSVEXP/BLDBUILD EXPRESSION TREE

STRCMP

- ADDELM ADD ELEMENT
- FNDFLD FIND FIELD
- GATDEF GET ATTRIBUTE DEFINITION
- GOFPTR GET OPEN FROM POINTER
## FORM PROCESSOR Where-external-routine-used List

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### STRCPY

- `MAKFLD` MAKE FIELD

### STRLEN

- `CALLFP` CALL FP ROUTINES
- `CMPIFLD` COMPUTE FIELD
- `CMPIFLD`/EVA EVALUATE FIELD EXPRESSION
- `FNDMSG` FIND MESSAGE
- `GDVINP` GET DEVICE INPUT
- `GETATT` GET ATTRIBUTE
- `GETBAK` GET BACKGROUND ATTRIBUTE
- `GETCUR/CONCONCATENATE STRING TO CURRENT NAME`
- `GPAGE` GET PAGE
- `MAKUSR` MAKE USER
- `OISCR/FVTBFLILL` VTI BUFFER
- `OISCR/PROCPROCESS FIELD`
- `OISCR/PROCPROCESS WINDOW`
- `OPNFRM/PITPROCESS ITEM`
- `PARFQN` PARSE FULLY QUALIFIED NAME
- `PDVOTP` PUT DEVICE OUTPUT
- `PMSGSL` PUT MESSAGE LINE STRING
- `RMVFPD` REMOVE FORM PROCESSOR DATA STRUCTURE
- `TRMDRV` TERMINATE DEVICE DRIVER
- `TRMUSR` TERMINATE USER
- `UIS` USR INTERFACE SERVICES
- `UIS/PRCINPFRCESS INPUT`
FORM PROCESSOR Where-external-routine-used List

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**TIME**

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3.10.7 Main Program Parts List

The following lists each Main Program listed in 3.10.1 and all the modules which are called either by that module itself or by any of the documented modules which it calls. It is possible for a non-main module to be listed more than once if it is called by multiple modules. The called modules, in this case known as program parts, are marked as to whether they are documented here. If so, the phrase "well-defined module" appears by the module name, if not it is an "external routine". The Purpose of the Main Program module is listed as well.
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# FORM PROCESSOR Main Program Parts List

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<tr>
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<td>Module Name</td>
<td>Module Type</td>
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<tr>
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<td>SNDVTI</td>
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<td>STRNLOC</td>
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</tr>
<tr>
<td>STRNUPC</td>
<td>External routine</td>
<td></td>
</tr>
<tr>
<td>STRRCHR</td>
<td>External routine</td>
<td></td>
</tr>
<tr>
<td>STRUPC</td>
<td>External routine</td>
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<td>STUPPF</td>
<td>Well-defined module</td>
<td></td>
</tr>
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<td>SYMSG</td>
<td>Well-defined module</td>
<td></td>
</tr>
<tr>
<td>TERMVT</td>
<td>Well-defined module</td>
<td></td>
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<td>TIME</td>
<td>External routine</td>
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<td>TOUPPER</td>
<td>External routine</td>
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<tr>
<td>TRMNAT</td>
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</tr>
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<td>TRMUSR</td>
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<td>UIS/PRCINP</td>
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<td>UIS/STRTAP</td>
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<td>UIS/STRTPD</td>
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3-67
<table>
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<th>Main Pgm Name</th>
<th>Module Name</th>
<th>Module Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>PRNDS</td>
<td>Purpose--</td>
<td>PRINT DISPLAY LIST</td>
</tr>
<tr>
<td></td>
<td>DOATTR</td>
<td>External routine</td>
</tr>
<tr>
<td></td>
<td>DOITEM</td>
<td>External routine</td>
</tr>
<tr>
<td></td>
<td>DOWIND</td>
<td>External routine</td>
</tr>
<tr>
<td></td>
<td>PRINTF</td>
<td>External routine</td>
</tr>
<tr>
<td></td>
<td>PRNFLD</td>
<td>Well-defined module</td>
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</table>
FORM PROCESSOR Main Program Parts List

<table>
<thead>
<tr>
<th>Main Pgm Name</th>
<th>Module Name</th>
<th>Module Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>PRNOPN</td>
<td>DOATTR</td>
<td>External routine</td>
</tr>
<tr>
<td></td>
<td>DOIITEM</td>
<td>External routine</td>
</tr>
<tr>
<td></td>
<td>DOWIND</td>
<td>External routine</td>
</tr>
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<td></td>
<td>PRINTF</td>
<td>External routine</td>
</tr>
<tr>
<td></td>
<td>PRNFLD</td>
<td>Well-defined module</td>
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</table>
### FORM PROCESSOR Main Program Parts List

<table>
<thead>
<tr>
<th>Main Pgm Name</th>
<th>Module Name</th>
<th>Module Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>PRNUID</td>
<td>PRINT UID</td>
<td>Purpose: PRINT UID</td>
</tr>
<tr>
<td>PRINTF</td>
<td></td>
<td>External routine</td>
</tr>
<tr>
<td>PRNAP</td>
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</tr>
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<td>PRNPD</td>
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3-70
<table>
<thead>
<tr>
<th>Main Pgm Name</th>
<th>Module Name</th>
<th>Type</th>
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</thead>
<tbody>
<tr>
<td>PRNUSR</td>
<td>PRINTF</td>
<td>External routine</td>
</tr>
<tr>
<td></td>
<td>PRNAP</td>
<td>Well-defined module</td>
</tr>
<tr>
<td></td>
<td>PRNPD</td>
<td>Well-defined module</td>
</tr>
</tbody>
</table>
3.10.8 Module Documentation

The following documentation describes information which is specific to each individual module being documented in this specification as listed in section 3.10.2. It provides a compact way of getting information that would be otherwise buried within each module's source code.

The specific items in this module documentation have the following meanings:

NAME: Name of program Module.
PURPOSE: Purpose of Module as detailed in the source code.

LANGUAGE: Programming language source code is written in.
The choices are:

- VAX-11 FORTRAN
- C (I/S-1 Workbench 'C')
- VAX-11 COBOL

MODULE TYPE: Whether a Program, Subroutine, or Function.

SOURCE FILE: Name of Source File from file specification.

SOURCE FILE TYPE: Source File Extension from file specification.

HOST: Whether this is a host-dependent routine (VAX or IBM) or blank if host-independent.

SUBSYSTEM: IISS sub-system this file resides in.

SUBDIRECTORY: Sub-directory of that subsystem in which this file resides.

DOCUMENTATION GROUP: Name of documentation group of which this source file is a member.

DESCRIPTION: A description of the module as obtained
from the source code.

ARGUMENTS: The arguments with which this routine is called if it is a Subroutine or a Function.

INCLUDE FILES: A list of all the files that are included into this module as well as their purposes.

ROUTINES CALLED: Subroutines or Functions, either documented or external, called by this module, if any.

CALLED DIRECTLY BY: The documented routines which call this module, if any.

USED IN MAIN PROGRAM(S): The documented Main Programs which contain this module in their parts list according to the list in section 3.10.7.

The Module Documentation is arranged alphabetically according to Module Name.
NAME: ACRPOS
PURPOSE: ABSOLUTIZE CURSOR POSITION OF FIELD
LANGUAGE: C
MODULE TYPE: SUBROUTINE
FUNCTION TYPE: VOID
SOURCE FILE: ACRPOS
SOURCE FILE TYPE: .C
HOST: SUBSTITUTE: UI
SUBDIRECTORY: FP
DOCUMENTATION GROUP: FORMPROC
DESCRIPTION:

SYNOPSIS
VOID ACRPOS(DP,ABSPOS)
   FIELD *DP;
   POSITION *ABSPOS;

INPUTS/OUTPUTS:

INPUTS:
   DP - FIELD WHOSE ROW AND COL WANT TO ABSOLUTIZED
   ADDRESS OF STURCTURE FOR RETURNING VALUES OF:
   ABSOLUTE
   ROW
   ABSOLUTE
   COL

OUTPUTS:
   STRUCTURE CONTAINING:
   ABSOLUTE ROW OF FIELD
   ABSOLUTE COL OF FIELD

DESCRIPTION
THIS MODULE ABSOLUTIZES A FIELD'S ROW AND COL BY GOING
BACK UP
CHILD PARENT TREE AND ADDING EACH SUCCESSIVE PARENT'S ROW
AND COL
TO SUM OF CHILDS.
ARGUMENTS:

\[
\begin{align*}
\text{DP} &= \text{FIELD} \ ' \\
\text{ABSPOS} &= \text{POSITION} ' \\
\end{align*}
\]

INCLUDE FILES:

\[
\begin{align*}
\text{STDDTYP} & \quad \text{STANDARD TYPE DEFINITIONS} \\
\text{FPD} & \quad \text{FORM PROCESSOR DATA} \\
\end{align*}
\]

CALLED DIRECTLY BY:

\[
\begin{align*}
\text{CURPOS/FNDCP} & \quad \text{FIND CURSOR POSITION} \\
\text{GETCUR} & \quad \text{GET CURSOR POSITION} \\
\end{align*}
\]

USED IN MAIN PROGRAM(S):

\[
\begin{align*}
\text{MONITR/MAI} & \quad \text{MAIN MODULE FOR MONITOR/UIS/FP PROCESS} \\
\end{align*}
\]
NAME: ADDELM
PURPOSE: ADD ELEMENT
LANGUAGE: C
MODULE TYPE: FUNCTION
FUNCTION TYPE: INT()
SOURCE FILE: ADDELM
SOURCE FILE TYPE: .C
HOST: SUBSYSTEM UI
SUBDIRECTORY: FP
DOCUMENTATION GROUP: FORMPROC

DESCRIPTION:

SYNOPSIS
ADDELM(EPATH, PCOUNT, RCODE)

EPATH EPATH:
INT *PCOUNT;
CHAR RCODE[RCODE_LEN]:

INPUTS:
EPATH - ARRAY TO ADD ELEMENT TO

OUTPUTS:
PCOUNT - INDEX OF ELEMENT ADDED
RCODE - RETURN CODE OF OPERATION

DESCRIPTION
ADDS AN ELEMENT TO AN OPEN ENDED ARRAY.

ARGUMENTS:

EPATH = EPATH
PCOUNT = INT *
RCODE = CHAR [RCODE_LEN]

INCLUDE FILES:

STDTYP - STANDARD TYPE DEFINITIONS

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FPD - FORM PROCESSOR DATA
FPCODE - FORM PROCESSOR RETURN CODES

ROUTINES CALLED:
- ESCPY - EXTERNAL STRING COPY
- PTHPTR - GET PATH POINTER
- MEMCPY
- ABS
- SYMSG - SYSTEM MESSAGE ROUTINE
- MAX
- RSVEXP - RESOLVE EXPRESSIONS
- COPFLD - COPY FIELD
- STRCMP
- GOFPTR - GET OPEN FROM POINTER

CALLED DIRECTLY BY:
- CALLFP - CALL FP ROUTINES

USED IN MAIN PROGRAM(S):
- MONITR/MAI - MAIN MODULE FOR MONITOR/UIS/FP PROCESS
FORM PROCESSOR Module Documentation

NAME: ADDFRM
PURPOSE: ADD FORM TO WINDOW
LANGUAGE: C
MODULE TYPE: FUNCTION
FUNCTION TYPE: FORTRAN VOID ()
SOURCE FILE: ADDFRM
SOURCE FILE TYPE: .C
HOST:
SUBSYSTEM: UI
SUBDIRECTORY: FP
DOCUMENTATION GROUP: FORMPROC

DESCRIPTION:

SYNOPSIS
FORTRAN VOID ADDFRM(EWPATH, EFNAME, PAGEP, RCODE)

EPATH EWPATH;
ENAME EFNAME;
INT *PAGEP;
CHAR RCODE[];

INPUTS:
EWPATH - PATH NAME OF WINDOW TO ADD FORM TO
EFNAME - NAME OF FORM TO ADD TO WINDOW

OUTPUTS:
PAGES - PAGE NUMBER OF ADDED FORM
RCODE - RETURN CODE

DESCRIPTION
ADDFRM ADDS A FORM TO A WINDOW.

ARGUMENTS:

EWPATH = EPATH
EFNAME = ENAME
PAGEP = INT *
RCODE = CHAR []

INCLUDE FILES

STDTYP = STANDARD TYPE DEFINITIONS
FPD - FORM PROCESSOR DATA
FP CODE - FORM PROCESSOR RETURN CODES

ROUTINES CALLED:

- ESCPY - EXTERNAL STRING COPY
- PTHPTR - GET PATH POINTER
- SYMSUG - SYSTEM MESSAGE ROUTINE
- COPFRM - COPY FORM
- MEMCPY

CALLED DIRECTLY BY:

- CALLFP - CALL FP ROUTINES
- UIS - USR INTERFACE SERVICES

USED IN MAIN PROGRAM(S):

- MONITR/MAI - MAIN MODULE FOR MONITOR/UIS/FP PROCESS
FORM PROCESSOR Module Documentation

NAME: ADJSTR
PURPOSE: ADJUST FORM PROCESSOR STRUSTRUCTURE
LANGUAGE: C
MODULE TYPE: SUBROUTINE
FUNCTION TYPE: VOID ()
SOURCE FILE: ADJSTR
SOURCE FILE TYPE: .C
HOST:
SUBSYSTEM: UI
SUBDIRECTORY: FP
DOCUMENTATION GROUP: FORMPROC

DESCRIPTION:

SYNOPSIS
VOID GARPOS(DP)
FIELD *DP:

INPUTS/OUTPUTS:

INPUTS:
DP - FIELD WHOSE CHANGE IN ROW, COL, WIDTH, OR DEPTH ADJUSTING FOR

OUTPUTS:
NONE

DESCRIPTION
THIS MODULE ADJUSTS PARENT ARRAY STRUCTURES FOR CHANGE IN A WINDOW ELEMENT OF ARRAY WHOSE LOCATION OR SIZE HAS CHANGED

ARGUMENTS:

DP = FIELD *

INCLUDE FILES:

STDTYPE - STANDARD TYPE DEFINITIONS
FPD - FORM PROCESSOR DATA
ROUTINES CALLED:
---------------
ABS
ADJSTR    - ADJUST FORM PROCESSOR STRUCTURE

CALLED DIRECTLY BY:
-------------------
ADJSTR    - ADJUST FORM PROCESSOR STRUCTURE
FORM PROCESSOR Module Documentation

NAME: CALLFP
PURPOSE: CALL FP ROUTINES
LANGUAGE: C
MODULE TYPE: SUBROUTINE
FUNCTION TYPE: VOID ()
SOURCE FILE: CALLFP
SOURCE FILE TYPE: .C
HOST:
SUBSYSTEM: UI
SUBDIRECTORY: FP
DOCUMENTATION GROUP: FORMPROC

DESCRIPTION:

SYNOPSIS
VOID CALLFP(APPLCT, LOGCH, INPTREC, LENGTH);
NAME APPLCT;
CHAN LOGCH;
INPTREC *INPTREC;
REGISTER INT LENGTH;

INPUTS/OUTPUTS:

INPUTS:
APPLCT - APPLICATION WHICH IS CALLING FORM PROCESSOR
LOGCH - CHANNEL ON WHICH THE APPLICATION IS CALLING FP
INPTREC - INPUT PARAMETERS FROM THIS APLICATION
LENGTH - LENGTH OF BUFFER CONTAINING INPUT PARAMETERS

OUTPUTS:
NONE

DESCRIPTION
PERFORMS REQUESTED FP CALLS USING INPUT PARAMETERS FOUND IN
INPTREC.

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ARGUMENTS:

<table>
<thead>
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<th>ARGUMENT</th>
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<td>NTM INTERFACE INCLUDE FILE</td>
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ROUTINES CALLED:

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<tr>
<td>RMVPAG</td>
<td>REMOVE PAGE</td>
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<tr>
<td>PUTLOC</td>
<td>PUT LOCATION</td>
</tr>
<tr>
<td>PUTBAK</td>
<td>PUT BACKGROUND ATTRIBUTES</td>
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<td>PUTATT</td>
<td>PUT ATTRIBUTES</td>
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<tr>
<td>PARFQN</td>
<td>PARSE FULLY QUALIFIED NAME</td>
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<td>GPAGE</td>
<td>GET PAGE</td>
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<td>GVTINW</td>
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<td>GETBAK</td>
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<td>ADD ELEMENT</td>
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<td>OUTPUT SCREEN</td>
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<td>OPNLVD</td>
<td>OPEN LOGICAL DEVICE</td>
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</tbody>
</table>

3-83
OPNFRM       - OPEN FORM
ONWISC       - OUTPUT (NO WAIT) / INPUT SCREEN
INQLDV       - INQUIRE LOGICAL DEVICE
INITVT       - INITIAL VIRTUAL TERMINAL INTERFACE
GWINDO       - GET WINDOW
MIN
GETCUR       - GET CURSOR POSITION
MEMCPY
GDATLN       - GET DATA LENGTH
CLSFRM       - CLOSE FORM
ADDFRM       - ADD FORM TO WINDOW

CALLED DIRECTLY BY:
----------------------
MONITR/MAI - MAIN MODULE FOR MONITOR/UIS/FP PROCESS

USED IN MAIN PROGRAM(S):
----------------------
MONITR/MAI - MAIN MODULE FOR MONITOR/UIS/FP PROCESS
FORM PROCESSOR Module Documentation

NAME: CANITM
PURPOSE: CANONICALIZE ITEM
LANGUAGE: C
MODULE TYPE: SUBROUTINE
FUNCTION TYPE: VOID ()
SOURCE FILE: CANITM
SOURCE FILE TYPE: .C
HOST:
SUBSYSTEM: UI
SUBDIRECTORY: FP
DOCUMENTATION GROUP: FORMPROC

DESCRIPTION:

SYNOPSIS
VOID CANITM(DP)
FIELD *DP:

INPUTS:
DP - POINTER TO ITEM TO CANONICALIZE

DESCRIPTION
CANITM PERFORMS FORMAT CHANGES ON AN ITEM. POSSIBLE FORMAT CHANGES ARE LEFT JUSTIFY, RIGHT JUSTIFY, UPPER CASE AND LOWER CASE.

ARGUMENTS:

DP = FIELD *

INCLUDE FILES:

STDYP - STANDARD TYPE DEFINITIONS
FPD - FORM PROCESSOR DATA

ROUTINES CALLED:

CBPTR
BLEN
STRNLOC

3-85
MEMSET
STRNUPC

CALLED DIRECTLY BY:

------------------------
CMPFLD       - COMPUTE FIELD

USED IN MAIN PROGRAM(S):

---------------
MONITR/MAI   - MAIN MODULE FOR MONITOR/UIS/FP PROCESS
FORM PROCESSOR Module Documentation

NAME: CHGLDV
PURPOSE: CHANGE LOGICAL DEVICE
LANGUAGE: C
MODULE TYPE: FUNCTION
FUNCTION TYPE: FORTRAN VOID
SOURCE FILE: CHGLDV
SOURCE FILE TYPE: .C
HOST:
SUBSYSTEM: UI
SUBDIRECTORY: FP
DOCUMENTATION GROUP: FORMPROC

DESCRIPTION:

SYNOPSIS
FORTRAN VOID CHGLDV(LDWNID, RCODE)
INT *LDWNID;
CHAR RCODE[];

INPUTS/OUTPUTS:

INPUTS:
LDWNID - LOGICAL DEVICES TOP WINDOW ID
ADDRESS OF:
RETURN CODE

OUTPUTS:
RCODE - RETURN CODE

DESCRIPTION
THIS MODULE CHANGES LOGICAL DEVICE TO WHICH APPLICATION RUNS ON.
IF LOGICAL DEVICE NOT OPENED WILL RETURN NFPDSTRC ERROR.

ARGUMENTS:

-------
LDWNID = INT *
RCODE = CHAR []

3-87
INCLUDE FILES:
---------------------
STDTYPE - STANDARD TYPE DEFINITIONS
FPD - FORM PROCESSOR DATA
FPCODE - FORM PROCESSOR RETURN CODES

ROUTINES CALLED:
---------------------
MEMCPY

CALLED DIRECTLY BY:
---------------------
CALLFP - CALL FP ROUTINES

USED IN MAIN PROGRAM(S):
---------------------
MONITR/MAI - MAIN MODULE FOR MONITOR/UIS/FP PROCESS
FORM PROCESSOR Module Documentation

NAME: CHGPRC
PURPOSE: CHANGE PRECEDENCE OF WINDOW OR LOGICAL DEVICE
LANGUAGE: C
MODULE TYPE: SUBROUTINE
FUNCTION TYPE: VOID ()
SOURCE FILE: CHGPRC
SOURCE FILE TYPE: .C
HOST: SUBSYSTEM: UI
SUBDIRECTORY: FP
DOCUMENTATION GROUP: FORMPROC

DESCRIPTION:

SYNOPSIS
VOID CHGPRC(WDP,WFPD)
FIELD *WDP;
FPD *WFPD;

INPUTS/OUTPUTS:

INPUTS:
    WDP   -  POINTER TO WINDOW TO BE PUT AT TOPMOST PRECEDENCE
    WFPD -  POINTER TO LOG DEVICE OF WINDOW TO BE PUT AT TOPMOST PRECEDENCE

OUTPUTS:
    NONE

DESCRIPTION
    THIS MODULE PUTS DESIGNATED WINDOW(OR DEVICE) AT BEGINNING OF
    LINK LIST OF WINDOWS AT ITS LEVEL (FSTFPD OR CONPTR)

ARGUMENTS:

WDP =   FIELD *
WFPD =  FPD *
INCLUDE FILES:

-------------------
STDTPY   - STANDARD TYPE DEFINITIONS
FPD      - FORM PROCESSOR DATA

CALLED DIRECTLY BY:

-------------------
UIS/PRCWND - PROCESS WINDOW

USED IN MAIN PROGRAM(S):

-------------------
MONITR/MAI - MAIN MODULE FOR MONITOR/UIS/FP PROCESS

3-90
FORM PROCESSOR Module Documentation

NAME: CLSFRM
PURPOSE: CLOSE FORM
LANGUAGE: C
MODULE TYPE: FUNCTION
FUNCTION TYPE: FORTRAN VOID ( )
SOURCE FILE: CLSFRM
SOURCE FILE TYPE: .C
HOST: SUBSYSTEM: UI
SUBDIRECTORY: FP
DOCUMENTATION GROUP: FORMPROC

DESCRIPTION:

SYNOPSIS

FORTRAN VOID CLSFRM(EFNAME, CODEP)

ENAME EFNAME;
CHAR CODEP[];

INPUTS:
EFNAME - NAME OF FORM TO CLOSE

OUTPUTS:
CODEP - RETURN CODE

DESCRIPTION

USE CLSFRM TO CLOSE A FORM. MEMORY SPACE FOR THE FORM IS ELIMINATED SO THAT IT MAY BE ALLOCATED TO ANOTHER FORM.
NOTE: CLSFRM DOES NOT CLOSE A FORM IF THAT FORM IS CURRENTLY USED ANYWHERE ON THE DISPLAY LIST OR AS A SUBFORM TO A FORM ON THE OPEN LIST.

ARGUMENTS:

EFNAME = ENAME
CODEP = CHAR []

INCLUDE FILES:

STDTYPE - STANDARD TYPE DEFINITIONS

3-91
FPD - FORM PROCESSOR DATA
FPCODE - FORM PROCESSOR RETURN CODES

ROUTINES CALLED:

ESCPY - EXTERNAL STRING COPY
STRUPE
GOFPTR - GET OPEN FROM POINTER
SYMSMSEG - SYSTEM MESSAGE ROUTINE
DELFED - DELETE FIELD
MEMCPY

CALLED DIRECTLY BY:

CALLFP - CALL FP ROUTINES

USED IN MAIN PROGRAM(S):

MONITR/MAI - MAIN MODULE FOR MONITOR/UIS/FP PROCESS
NAME: CLSLDV
PURPOSE: CLOSE LOGICAL DEVICE
LANGUAGE: C
MODULE TYPE: FUNCTION
FUNCTION TYPE: FORTRAN VOID ()
SOURCE FILE: CLSLDV
SOURCE FILE TYPE: C
HOST:
SUBSYSTEM: UI
SUBDIRECTORY: FP
DOCUMENTATION GROUP: FORMPROC

DESCRIPTION:

SYNOPSIS
FORTRAN VOID CLSLDV(LDWNID,RCODE)
    INT *LDWNID;
    CHAR RCODE[];

INPUTS/OUTPUTS:

INPUTS:
    LDWNID - LOGICAL DEVICES TOP WINDOW ID
    ADDRESS OF:
    RETURN CODE

OUTPUTS:
    RCODE - RETURN CODE

DESCRIPTION
THIS MODULE CLOSE LOGICAL DEVICE. IF LOGICAL DEVICE NOT
OPENED WILL
RETURN NFPDSTRC OR CURFPDST ERRORS.

ARGUMENTS:

LDWNID = INT *
RCODE = CHAR []
INCLUDE FILES:

- STDTYPE - STANDARD TYPE DEFINITIONS
- FPD - FORM PROCESSOR DATA
- FPCODE - FORM PROCESSOR RETURN CODES

ROUTINES CALLED:

- FNFNPWN - FIND FORM PROCESSOR WINDOW
- RMVFPD - REMOVE FORM PROCESSOR DATA STRUCTURE
- MEMCPY

CALLED DIRECTLY BY:

- CALLFP - CALL FP ROUTINES

USED IN MAIN PROGRAM(S):

- MONITR/MAI - MAIN MODULE FOR MONITOR/UIS/FP PROCESS
FORM PROCESSOR Module Documentation

NAME: CMPFLD
PURPOSE: COMPUTE FIELD
LANGUAGE: C
MODULE TYPE: FUNCTION
FUNCTION TYPE: CHAR * ()
SOURCE FILE: CMPFLD
SOURCE FILE TYPE: .C
HOST:
SUBSYSTEM: UI
SUBDIRECTORY: FP
DOCUMENTATION GROUP: FORMPROC

DESCRIPTION:

SYNOPSIS
STATIC CHAR *CMPFLD(DP)
FIELD *DP;

INPUTS:
DP - POINTER TO FIELD TO BE COMPUTED

OUTPUTS:
RETURNS NULL OR ERROR CODE

DESCRIPTION
COMPUTES THE CURRENT VALUE OF A CALCULATED FIELD.

ARGUMENTS:

DP = FIELD *

INCLUDE FILES:

STDTYPE - STANDARD TYPE DEFINITIONS
CTYPE - **** PURPOSE NOT FOUND BY STRIPPER ****
TIME - **** PURPOSE NOT FOUND BY STRIPPER ****
FPD - FORM PROCESSOR DATA
FPICODE - FORM PROCESSOR RETURN CODES

ROUTINES CALLED:

3-95
---

CMPFLD/EVAL - EVALUATE FIELD EXPRESSION
STRLEN
BLN
CANITH - CANONICALIZE ITEM
MEMCPY
SYSMSG - SYSTEM MESSAGE ROUTINE
FREE
MEMSET
CBPTR

called directly by:
---

OISCR/CMPALL - COMPUTE ALL CALCULATED FIELDS
RSVEXP - RESOLVE EXPRESSIONS

used in main program(s):
---

MONITR/MAI - MAIN MODULE FOR MONITOR/UIS/FP PROCESS
FORM PROCESSOR Module Documentation

NAME: CMPFLD/EVAL
PURPOSE: EVALUATE FIELD EXPRESSION
LANGUAGE: C
MODULE TYPE: FUNCTION
FUNCTION TYPE: CHAR (*)
SOURCE FILE: CMPFLD
SOURCE FILE TYPE: .C
HOST:
SUBSYSTEM: UI
SUBDIRECTORY: FP
DOCUMENTATION GROUP: FORMPROC

DESCRIPTION:

SYNOPSIS

STATIC CHAR *EVAL(EP, RP)
ENODE *EP;
EXPVAL *RP;

INPUTS:
EP - POINTER TO EXPRESSION TO EVALUATE

OUTPUTS:
RP - POINTER TO RETURNED RESULT
RETURNS NULL OR ERROR CODE

DESCRIPTION

EVALUATES THE SPECIFIED FIELD EXPRESSION.

ARGUMENTS:

EP = ENODE *
RP = EXPVAL *

INCLUDE FILES:

STDTYP - STANDARD TYPE DEFINITIONS
CTYPE - "" PURPOSE NOT FOUND BY STRIPPER ""
TIME - "" PURPOSE NOT FOUND BY STRIPPER ""
FPD - FORM PROCESSOR DATA
FPCODE - FORM PROCESSOR RETURN CODES

3-97
ROUTINES CALLED:

FREE
ISDIGIT
CMPFLD/EVAL - EVALUATE FIELD EXPRESSION
MEMCPY
PRINTF
STRLEN
CBPTR
ESCPY - EXTERNAL STRING COPY
MALLOC
BLEN
SYSMSG - SYSTEM MESSAGE ROUTINE

CALLED DIRECTLY BY:

CMPFLD/EVA - EVALUATE FIELD EXPRESSION
CMPFLD - COMPUTE FIELD

USED IN MAIN PROGRAM(S):

MONITR/MAI - MAIN MODULE FOR MONITOR/UIS/FP PROCESS
FORM PROCESSOR Module Documentation

NAME: COPFLD
PURPOSE: COPY FIELD
LANGUAGE: C
MODULE TYPE: FUNCTION
FUNCTION TYPE: CHAR * ()
SOURCE FILE: COPFLD
SOURCE FILE TYPE: .C
HOST: ""
SUBSYSTEM: UI
SUBDIRECTORY: FP
DOCUMENTATION GROUP: FORMPROC

DESCRIPTION

SYNOPSIS

CHAR *COPFLD(DP, PAR DP, ROW, COL, LNK_RDP, LNK_LDP)
FIELD *PAR DP;
FIELD *DP;
INT ROW, COL;
FIELD **LNK_RDP, **LNK_LDP;

INPUTS

NEW DP - POINTER TO FIELD TO BE COPIED (IN OPEN LIST)
PAR DP - POINTER TO PARENT OF NEWLY CREATED COPY
ROW - ROW WITHIN PARENT
COL - COLUMN WITHIN PARENT
LNK_RDP - POINTER TO BE SET TO POINT TO NEWLY CREATED COPY
LNK_LDP - RIGHT POINTER
LNK_RDP - POINTER TO BE SET TO POINT TO NEWLY CREATED COPY
LNK_LDP - LEFT POINTER

OUTPUTS

ERROR CODE IS RETURNED IF ONE OCCURRED ELSE A NULL IS RETURNED

DESCRIPTION

COPFLD COPIES A FORM FIELD AND ALL SUB FIELDS. THE COPY IS ALWAYS FROM
THE OPEN LIST A CHAIN OF FORWARD POINTERS IS KEPT TO

3-99

ARGUMENTS:

<table>
<thead>
<tr>
<th>Argument</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>DP</td>
<td>FIELD *</td>
</tr>
<tr>
<td>PAR DP</td>
<td>FIELD *</td>
</tr>
<tr>
<td>LNK RDP</td>
<td>FIELD **</td>
</tr>
<tr>
<td>LNK LDP</td>
<td>FIELD **</td>
</tr>
</tbody>
</table>

INCLUDE FILES:

- STDTYP - STANDARD TYPE DEFINITIONS
- FPD    - FORM PROCESSOR DATA
- FPCODE - FORM PROCESSOR RETURN CODES
- BITS   - INCLUDE FILE FOR BIT MANIPULATION Routines

ROUTINES CALLED:

- COPFLD/CPYFLD - INTERNAL COPY FIELD
- RSVATT        - RESOLVE ATTRIBUTE

CALLED DIRECTLY BY:

- ADDELM - ADD ELEMENT
- COPFRM  - COPY FORM
- OPNFRM PFR - PROCESS FORM

USED IN MAIN PROGRAM(S):

- MONITR MAI - MAIN MODULE FOR MONITOR UIS/FP PROCESS
NAME: COPFLD/CPYFLD
PURPOSE: INTERNAL COPY FIELD
LANGUAGE: C
MODULE TYPE: FUNCTION
FUNCTION TYPE: CHAR * ()
SOURCE FILE: COPFLD
SOURCE FILE TYPE: .C
HOST: SUBSYSTEM: UI
SUBDIRECTORY: FP
DOCUMENTATION GROUP: FORMPROC

DESCRIPTION:
RECURSIVE ROUTINE CALLED TO COPY A FIELD AND ALL ITS
SUBFIELDS

ARGUMENTS:

DP = FIELD *
PAR DP = FIELD *
LNK RDP = FIELD **
LNK LDP = FIELD **

INCLUDE FILES:

STDTYP - STANDARD TYPE DEFINITIONS
FP - FORM PROCESSOR DATA
FPCCDE - FORM PROCESSOR RETURN CODES
BIT - INCLUDE FILE FOR BIT MANIPULATION ROUTINES

ROUTINES CALLED:

CBIT
ABS
COPFLD/CPYFLD - INTERNAL COPY FIELD
SBIT
FFBCA
PBPTR
CBITR
MEMCPY
FREE
BLEN
STRASN
SYSMSG - SYSTEM MESSAGE ROUTINE
MALLOC

CALLED DIRECTLY BY:
---------
COPFLD/CPYFLD - INTERNAL COPY FIELD
COPFLD - COPY FIELD

USED IN MAIN PROGRAM(S):
------------------------
MONITR/MAI - MAIN MODULE FOR MONITOR/UIS/FP PROCESS
NAME: COPFRM
PURPOSE: COPY FORM
LANGUAGE: C
MODULE TYPE: FUNCTION
FUNCTION TYPE: CHAR (*)
SOURCE FILE: COPFRM
SOURCE FILE TYPE: .C
HOST:
SUBSYSTEM: UI
SUBDIRECTORY: FP
DOCUMENTATION GROUP: FORMPROC

DESCRIPTION:

SYNOPSIS

CHAR *COPFRM(EFNAME, PARPTR, NXTPTR, PRVPTR)
ENAME EFNAME;
FIELD *PARPTR, **NXTPTR, **PRVPTR;

DESCRIPTION

COPIES A FORM FROM THE OPEN LIST TO THE DISPLAY LIST AND
PERFORMS THE
NECESSARY CLEANUP (E.G. ASSIGNING WINDOW IDS, CALCULATING
FIELDS, ETC.).

ARGUMENTS:

-----------
EFNAME = ENAME
PARPTR = FIELD *
NXTPTR = FIELD **
PRVPTR = FIELD **

INCLUDE FILES:

---------------------
STDTYP - STANDARD TYPE DEFINITIONS
FPD - FORM PROCESSOR DATA
FPCODE - FORM PROCESSOR RETURN CODES

ROUTINES CALLED:

---------------------
3-103
ESCPY  - EXTERNAL STRING COPY
STRUPC
GOFPTR  - GET OPEN FROM POINTER
SYSMSG  - SYSTEM MESSAGE ROUTINE
COPFLD  - COPY FIELD
MAX
RSVEXP  - RESOLVE EXPRESSIONS
OPNFRM  - OPEN FORM

CALLED DIRECTLY BY:

- ADDFRM  - ADD FORM TO WINDOW
- RPLFRM  - REPLACE FORM
- STUPFP  - SET UP FORM PROCESSOR DATA STRUCTURES

USED IN MAIN PROGRAM(S):

- MONITR/MAI  - MAIN MODULE FOR MONITOR/UIS/FP PROCESS
FORM PROCESSOR Module Documentation

NAME: CURPOS
PURPOSE: GET CURSOR POSITION
LANGUAGE: C
MODULE TYPE: FUNCTION
FUNCTION TYPE: FIELD *()
SOURCE FILE: CURPOS
SOURCE FILE TYPE: .C
HOST:
SUBSYSTEM: UI
SUBDIRECTORY: FP
DOCUMENTATION GROUP: FORMPROC

DESCRIPTION:

SYNOPSIS
FIELD *CURPOS()

OUTPUTS:
RETURNS A POINTER TO THE FIELD CONTAINING THE CURSOR.

DESCRIPTION
RETURNS A POINTER TO THE SMALLEST FIELD CONTAINING THE CURSOR WITH THE EXCEPTION OF TRANSPARENT FIELDS.

INCLUDE FILES:
-------------------
STDTYP - STANDARD TYPE DEFINITIONS
FPD - FORM PROCESSOR DATA

ROUTINES CALLED:
-------------------
CURPOS/FNDCP - FIND CURSOR POSITION

CALLED DIRECTLY BY:
-------------------
GETCUR - GET CURSOR POSITION

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USED IN MAIN PROGRAM(S):

MONITR/MAI - MAIN MODULE FOR MONITOR/UIS/FP PROCESS
FORM PROCESSOR Module Documentation

NAME: CURPOS/FNDCP
PURPOSE: FIND CURSOR POSITION
LANGUAGE: C
MODULE TYPE: FUNCTION
FUNCTION TYPE: FIELD (*)
SOURCE FILE: CURPOS
SOURCE FILE TYPE: .C
HOST:
SUBSYSTEM: UI
SUBDIRECTORY: FP
DOCUMENTATION GROUP: FORMPROC

DESCRIPTION:

DESCRIPTION

RETURNS A POINTER TO THE SMALLEST FIELD WHICH ENCLOSES
THE CURSOR.
A FORM OR A WINDOW MUST BE NONTRANSPARENT TO BE
CONSIDERED.

ARGUMENTS:

---------------

FLDPTR = FIELD *

INCLUDE FILES:

---------------

STDTYP - STANDARD TYPE DEFINITIONS
FPD - FORM PROCESSOR DATA

ROUTINES CALLED:

---------------

ABS
CURPOS/FNDCP - FIND CURSOR POSITION
ACRPOS - ABSOLUTIZE CURSOR POSITION OF FIELD

CALLED DIRECTLY BY:

---------------

CURPOS/FNDCP - FIND CURSOR POSITION
CURPOS - GET CURSOR POSITION
USED IN MAIN PROGRAM(S):

MONITR/MAI - MAIN MODULE FOR MONITOR/UIS/FP PROCESS
FORM PROCESSOR Module Documentation

NAME: DBCFNC
PURPOSE: CHECK FUNCTION
LANGUAGE: VAX-11 COBOL
MODULE TYPE: SUBROUTINE
SOURCE FILE: DBCFNC
SOURCE FILE TYPE: .COB
HOST:
SUBSYSTEM: UI
SUBDIRECTORY: UIS
DOCUMENTATION GROUP: FORMPROC

DESCRIPTION:

THIS MODULE CHECKS A FUNCTION TO SEE IF IT IS A VALID UIMS OR REMOTE APPLICATION.

ARGUMENTS:

CURSOR = RECRD
ROLE = DSPLY [X(10)]
FUNCTION = DSPLY [X(10)]
TYT = DSPLY [X]
RCODE = DSPLY [X(5)]

INCLUDE FILES:

ORACLE - data delcarations for programs that access ORACLE
ORCODE - Oracle CODEs
CICODE - Command Interpreter CODEs
FPCODE - FORM PROCESSOR RETURN CODES
CURSOR - CURSOR description

ROUTINES CALLED:

OSQL3
OBIND
OEXEC

3-109
ODFINN
OFETCH

CALLED DIRECTLY BY:
------------------------
UIS/STRTAP - START APPLICATION

USED IN MAIN PROGRAM(S):
-------------------------
MONITR/MAI - MAIN MODULE FOR MONITOR/UIS/FP PROCESS
FORM PROCESSOR Module Documentation

NAME: DBCROL
PURPOSE: CHECK ROLE
LANGUAGE: VAX-11 COBOL
MODULE TYPE: SUBROUTINE
SOURCE FILE: DBCROL
SOURCE FILE TYPE: .COB
HOST:
SUBSYSTEM: UI
SUBDIRECTORY: UIS
DOCUMENTATION GROUP: FORMPROC

DESCRIPTION:

THIS MODULE CHECKS A ROLE TO SEE IF IT IS
VALID FOR A USER ID.

ARGUMENTS:

CURSOR = RECRD
USERID = DSPLY [X(10)]
ROLE = DSPLY [X(10)]
RCODE = DSPLY [X(5)]

INCLUDE FILES:

ORACLE - data declarations for programs that access
ORACLE
ORCODE - ORacle CODEs
CICODE - Command Interpreter CODEs
FFPCODE - FORM PROCESSOR RETURN CODES
CURSORI - CURSOR description

ROUTINES CALLED:

OSQL3
OBIND
OEXEC
ODFINN
OFETCH
CALLED DIRECTLY BY:

UIS - USR INTERFACE SERVICES

USED IN MAIN PROGRAM(S):

MONITR/MAI - MAIN MODULE FOR MONITOR/UIS/FP PROCESS
FORM PROCESSOR Module Documentation

NAME DELFLD
PURPOSE DELETE FIELD
LANGUAGE C
MODULE TYPE FUNCTION
FUNCTION TYPE CHAR *
SOURCE FILE DELFLD
SOURCE FILE TYPE C
HOST SUBSYSTEM U1
SUBDIRECTORY FP
DOCUMENTATION GROUP FORMPROC

DESCRIPTION

SYNOPSIS

CHAR *DELFLD(DP, PDP)
    FIELD 'DP, **PDP;

INPUTS:
    DP - POINTER TO FIELD TO BE DELETED
    PDP- POINTER TO POINTER TO THE TOP LEVEL OF THIS LIST

OUTPUTS:
    RETURNS AN ERROR CODE OR NULL (NO ERROR CAN OCCUR
    UNLESS DELETING FROM
    THE OPEN LIST)

DESCRIPTION

DELETES A FIELD FROM THE OPEN LIST OR THE DISPLAY LIST BY
    FIXING UP ALL
    THE PERTINENT POINTERS AND FREEING THE

ARGUMENTS:

        DP = FIELD '
        PDP = FIELD **

INCLUDE FILES:

        STDYP - STANDARD TYPE DEFINITIONS
        FPD - FORM PROCESSOR DATA
FPCODE FORM PROCESSOR RETURN CODES
BITS INCLUDE FILE FOR BIT MANIPULATION ROUTINES

ROUTINES CALLED:

SYSMSG SYSTEM MESSAGE ROUTINE
DELF LD DELETE FIELD
FREE
DELF LD DELEXP DELETE EXPRESSION
CBIT

CALLED DIRECTLY BY:

CLSFRM CLOSE FORM
DELF LD DELETE FIELD
OPNFRM OPEN FORM
RMVFPD REMOVE FORM PROCESSOR DATA STRUCTURE
RMVPAG REMOVE PAGE
RPLFRM REPLACE FORM

USED IN MAIN PROGRAM(S):

MONITR MAI MAIN MODULE FOR MONITOR UIS FP PROCESS
FORM PROCESSOR Module Documentation

NAME: DELFLD/DELEXP
PURPOSE: DELETE EXPRESSION
LANGUAGE: C
MODULE TYPE: SUBROUTINE
FUNCTION TYPE: VOID ()
SOURCE FILE: DELFLD
SOURCE FILE TYPE: .C
HOST:
SUBSYSTEM: UI
SUBDIRECTORY: FP
DOCUMENTATION GROUP: FORMPROC

DESCRIPTION:

SYNOPSIS:

STATIC VOID DELEXP(EP)
  ENODE *EP.

INPUTS:
  EP - POINTER TO EXPRESSION TO DELETE

DESCRIPTION
  FREES THE SPECIFIED EXPRESSION TREE

ARGUMENTS

EP - ENODE *

INCLUDE FILES

  STDTYP - STANDARD TYPE DEFINITIONS
  FPD - FORM PROCESSOR DATA
  FPCODE - FORM PROCESSOR RETURN CODES
  BITS - INCLUDE FILE FOR BIT MANIPULATION ROUTINES

ROUTINES CALLED:

  DELFLD DELEXP - DELETE EXPRESSION
  FREE
PS 620144200
1 November 1985

CALLED DIRECTLY BY:

---------------
DELEXP - DELETE EXPRESSION
DELFLD - DELETE FIELD

USED IN MAIN PROGRAM(S):

---------------
MONITR/MAI - MAIN MODULE FOR MONITOR/UIS/FP PROCESS
NAME: ESCPY
PURPOSE: EXTERNAL STRING COPY
LANGUAGE: C
MODULE TYPE: SUBROUTINE
FUNCTION TYPE: VOID (
SOURCE FILE: ESCPY
SOURCE FILE TYPE: .C
HOST: UI
SUBSYSTEM: SUBDIRECTORY: FP
DOCUMENTATION GROUP: FORMPROC

DESCRIPTION:

SYNOPSIS
VOID ESCPY(TO, FROM, LEN)
CHAR TO[];
CHAR FROM[];
INT LEN;

INPUTS:
FROM[] - STRING TO COPY FROM
LEN - MAXIMUM NUMBER OF CHARACTERS TO COPY

OUTPUTS:
TO - STRING TO COPY INTO

DESCRIPTION
ESCPY COPIES "LEN" CHARACTERS FROM "FROM" TO "TO" AND THEN REMOVES ANY TRAILING BLANKS FROM "TO".

ARGUMENTS:

TO = CHAR []
FROM = CHAR []
LEN = INT

INCLUDE FILES:

STDTYP - STANDARD TYPE DEFINITIONS

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ROUTINES CALLED:
------------------
STRNCOPY

CALLED DIRECTLY BY:
---------------------
ADDELH - ADD ELEMENT
ADDFRM - ADD FORM TO WINDOW
CLSFRM - CLOSE FORM
CMFLLD/EVA - EVALUATE FIELD EXPRESSION
COPFRM - COPY FORM
GDATA - GET DATA
GDATLN - GET DATA LENGTH
GETATT - GET ATTRIBUTE
GETBAK - GET BACKGROUND ATTRIBUTE
GPAGE - GET PAGE
GWINDO - GET WINDOW
MAKAP - MAKE APPLICATION STRUCTURE
MAKPD - MAKE PHYSICAL DEVICE STRUCTURE
MONITR/GETPD - GET PHYSICAL DEVICE
MONITR/MAI - MAIN MODULE FOR MONITOR/UIS/FP PROCESS
OWNISC - OUTPUT (NO WAIT) / INPUT SCREEN
OPNFRM/PFREC - PROCESS FORM RECORD
OPNFRM/PDREC - PROCESS FIELD RECORD
OPNFRM/PIT - PROCESS ITEM
OPNFRM/PWI - PROCESS WINDOW
OPNFRM - OPEN FORM
PARFQN - PARSE FULLY QUALIFIED NAME
PDATA - PUT FORM DATA
PMSGLS - PUT MESSAGE LINE STRING
PUTATT - PUT ATTRIBUTES
PUTBAK - PUT BACKGROUND ATTRIBUTES
PUTCUR - PUT CURSOR
PUTLOC - PUT LOCATION
RMVPAG - REMOVE PAGE
RPLFRM - REPLACE FORM
SFPDAP - SET FORM PROCESSOR DATA STRUCTURE FOR APPLICATION
UIS/STRTAP - START APPLICATION
UIS/STRTPD - START PHYSICAL DEVICE
UIS/FLWNST - FILL WINDOW MANAGER STRUCTURE
UIS/PRCIP - PROCESS INPUT
UIS - USR INTERFACE SERVICES
USED IN MAIN PROGRAM(S):

MONITR/MAI - MAIN MODULE FOR MONITOR/UIS/FP PROCESS
FORM PROCESSOR Module Documentation

NAME: FNDFLD
PURPOSE: FIND FIELD
LANGUAGE: C
MODULE TYPE: FUNCTION
FUNCTION TYPE: FIELD *()
SOURCE FILE: FNDFLD
SOURCE FILE TYPE: .C
HOST: UI
SUBSYSTEM: SUBDIRECTORY: FP
DOCUMENTATION GROUP: FORMPROC

DESCRIPTION:

SYNOPSIS
FIELD *FNDFLD(NAME, DP)
   NAME NAME;
   FIELD *DP;

INPUTS:
NAME - NAME OF THE FIELD TO FIND
DP - POINTER TO FORM TO LOOK FOR FIELD

OUTPUTS:
RETURNS POINTER TO FIELD

DESCRIPTION
GIVEN THE NAME OF A FIELD AND THE FORM IT IS ON FNDFLD
RETURNS A
POINTER TO THE FIELD.

ARGUMENTS:

NAME = NAME
DP = FIELD *

INCLUDE FILES:

STDTYP - STANDARD TYPE DEFINITIONS
FPD - FORM PROCESSOR DATA
ROUTINES CALLED:
------------------
STRCMP

CALLED DIRECTLY BY:
---------------------
OPNFRM/BRPNOD - BUILD RELATIVE POSITION NODE

USED IN MAIN PROGRAM(S):
-------------------------
MONITR/MAI - MAIN MODULE FOR MONITOR/UIS/FP PROCESS
FORM PROCESSOR Module Documentation

NAME: FNDMSG
PURPOSE: FIND MESSAGE
LANGUAGE: C
MODULE TYPE: SUBROUTINE
FUNCTION TYPE: VOID()
SOURCE FILE: FNDMSG
SOURCE FILE TYPE: .C
HOST:
SUBSYSTEM: UI
SUBDIRECTORY: FP
DOCUMENTATION GROUP: FORMPROC

DESCRIPTION:

SYNOPSIS
VOID FNDMSG(CODEP, MSGSTR)
CHAR *CODEP;
MSG MSGSTR;

INPUTS:
CODEP - RETURN CODE TO FIND MESSAGE FOR

OUTPUTS:
MSGSTR - MESSAGE CORRESPONDING TO CODEP

DESCRIPTION
FIND THE MESSAGE STRING THAT CORRESPONDS TO THE CODE.

ARGUMENTS:

CODEP = CHAR *
MSGSTR = MSG

INCLUDE FILES:

STDTP - STANDARD TYPE DEFINITIONS
STDIO - '*** PURPOSE NOT FOUND BY STRIPPER ***'
FPD - FORM PROCESSOR DATA
FPCODE - FORM PROCESSOR RETURN CODES
FPEMSG - FORM PROCESSOR ERROR MESSAGES
ROUTINES CALLED:

----------------

STRNCMP
FNDMSG/OMSGF - OPEN USER MESSAGE FILE
FNDMSG/CODSCH - CODE SEARCH
PRINTF
STRLEN
MEMSET

CALLED DIRECTLY BY:

--------------

PMSGLC - PUT MESSAGE LINE CODE
SYSMSG - SYSTEM MESSAGE ROUTINE

USED IN MAIN PROGRAM(S):

---------------------

MONITR/MAI - MAIN MODULE FOR MONITOR/UIS/FP PROCESS
FORM PROCESSOR Module Documentation

NAME: FNDMSG/CODSCH
PURPOSE: CODE SEARCH
LANGUAGE: C
MODULE TYPE: FUNCTION
FUNCTION TYPE: INT ()
SOURCE FILE: FNDMSG
SOURCE FILE TYPE: .C
HOST:
SUBSYSTEM: UI
SUBDIRECTORY: FP
DOCUMENTATION GROUP: FORMPROC

DESCRIPTION:

ARGUMENTS:

CODEP = CHAR *
FP = FILE *
MSGSTR = CHAR *

INCLUDE FILES:

STDTYP - STANDARD TYPE DEFINITIONS
STDSIO - **** PURPOSE NOT FOUND BY STRIPPER ****
FPD - FORM PROCESSOR DATA
FPCODE - FORM PROCESSOR RETURN CODES
FPEMSG - FORM PROCESSOR ERROR MESSAGES

ROUTINES CALLED:

MEMCPY
MEMCMP
FREAD
REWIND

CALLED DIRECTLY BY:

FNDMSG - FIND MESSAGE
USED IN MAIN PROGRAM(S):

MONITR/MAI - MAIN MODULE FOR MONITOR/UIS/FP PROCESS
FORM PROCESSOR Module Documentation

NAME: FNDMSG/OUMSGF
PURPOSE: OPEN USER MESSAGE FILE
LANGUAGE: C
MODULE TYPE: FUNCTION
FUNCTION TYPE: CHAR * ()
SOURCE FILE: FNDMSG
SOURCE FILE TYPE: .C
HOST: UI
SUBSYSTEM: FP
SUBDIRECTORY: FORMPROC
DOCUMENTATION GROUP: FORMPROC

DESCRIPTION:

SYNOPSIS
STATIC CHAR 'OUMSGF(CODEP)
CHAR CODEP[];

INPUTS:
CODEP - RETURN CODE TO OPEN MESSAGE FILE FOR

DESCRIPTION
OUMSGF OPENS THE MESSAGE FILE CORRESPONDING TO THE
SPECIFIED RETURN CODE.

ARGUMENTS:

CODEP - CHAR []

INCLUDE FILES:

STDTYP - STANDARD TYPE DEFINITIONS
STDIO - **** PURPOSE NOT FOUND BY STRIPPER ****
FPD - FORM PROCESSOR DATA
FPCODE - FORM PROCESSOR RETURN CODES
FPEMSG - FORM PROCESSOR ERROR MESSAGES

ROUTINES CALLED:

MEMCPY
FOPEN
SPRINTF
CALLED DIRECTLY BY:

FNDMSG - FIND MESSAGE

USED IN MAIN PROGRAM(S):

MONITR/MAI - MAIN MODULE FOR MONITOR/UIS/FP PROCESS
FORM PROCESSOR Module Documentation

NAME: FNFPWN  
PURPOSE: FIND FORM PROCESSOR WINDOW  
LANGUAGE: C  
MODULE TYPE: FUNCTION  
FUNCTION TYPE: FIELD '()'  
SOURCE FILE: FNFPWN  
SOURCE FILE TYPE: C  
HOST: UI  
SUBSYSTEM: FP  
SUBDIRECTORY: FP  
DOCUMENTATION GROUP: FORMPROC

DESCRIPTION:

SYNOPSIS

FIELD 'FNFPWN(FLDPT, WNDID)
FIELD 'FLDPT.
INT WNDID:

INPUTS:

FLDPT - POINTER TO FIRST WINDOW IN LIST TO BE SEARCHED
WNDID - ID OF WINDOW SEARCHING FOR

OUTPUTS:

RETURNS A POINTER TO WINDOW FOUND OR A NULL

DESCRIPTION

THIS MODULE SEARCHES FOR A WINDOW WITH THE ID GIVEN AND EITHER RETURNS A POINTER TO THE WINDOW FOUND OR A NULL.

ARGUMENTS:

-------------
FLDPT = FIELD ' 
WNDID = INT

INCLUDE FILES:

-------------
STDTYP - STANDARD TYPE DEFINITIONS
FPD - FORM PROCESSOR DATA

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ROUTINES CALLED:

- FNFPWN - FIND FORM PROCESSOR WINDOW

CALLED DIRECTLY BY:

- CLSLDV - CLOSE LOGICAL DEVICE
- FNFPWN - FIND FORM PROCESSOR WINDOW
- GDVINP - GET DEVICE INPUT
- OISCR/EVTBUF - EMPTY VTI BUFFER
- UIS/PRCINP - PROCESS INPUT

USED IN MAIN PROGRAM(S):

- MONITR MAI - MAIN MODULE FOR MONITOR/UIS/FP PROCESS
FORM PROCESSOR Module Documentation

NAME: FUISWN
PURPOSE: FIND UIS WINDOW
LANGUAGE: C
MODULE TYPE: FUNCTION
FUNCTION TYPE: FPD (*)
SOURCE FILE: FUISWN
SOURCE FILE TYPE: .C
HOST:
SUBSYSTEM: UI
SUBDIRECTORY: FP
DOCUMENTATION GROUP: FORMPROC

DESCRIPTION:

SYNOPSIS

FPD *FUISWN(PDPTR)
PD *PDPTR:

INPUTS/OUTPUTS:

INPUTS:

PDPTR - POINTER TO PHYSICAL DEVICE ON WHICH TO LOOK FOR UIS WINDOW

OUTPUTS:

RETURNS A POINTER TO UIS LOG DEV IF FOUND UIS OTHERWISE RETURNS NULL

DESCRIPTION

THIS MODULE SEARCHES FOR UIS WINDOW ON SPECIFIED PHYSICAL DEVICE.
IT RETURNS EITHER A POINTER TO THE UIS LOG DEV (IF FOUND) OR A NULL POINTER.

ARGUMENTS:

PDPTR = PD *
INCLUDE FILES:
-----------------
STDTPY - STANDARD TYPE DEFINITIONS
FPD - FORM PROCESSOR DATA

CALLED DIRECTLY BY:
-----------------
INSCR - INPUT SCREEN
PMSGLS - PUT MESSAGE LINE STRING

USED IN MAIN PROGRAM(S):
-----------------
MONITR/MAI - MAIN MODULE FOR MONITOR/UIS/FP PROCESS
FORM PROCESSOR Module Documentation

NAME:          GARPOS
PURPOSE:       GET ARRAY OFFSET POSITION OF FIELD
LANGUAGE:      C
MODULE TYPE:   SUBROUTINE
FUNCTION TYPE: VOID ()
SOURCE FILE:   GARPOS
SOURCE FILE TYPE: .C
HOST:          
SUBSYSTEM:     UI
SUBDIRECTORY:  FP
DOCUMENTATION GROUP: FORMPROC

DESCRIPTION:

SYNOPSIS

VOID GARPOS(DP, PARPTR, ARYPOS)
FIELD *DP;
FIELD **PARPTR;
POSITION *ARYPOS;

INPUTS/OUTPUTS:

INPUTS:
   DP - FIELD WHOSE OFFSET ROW AND COL FROM FIRST ARRAY
        DIMENSION WANTED
        ADDRESS OF STRUCTURE FOR RETURNING VALUES OF:
                      OFFSET ROW
                      OFFSET COL

OUTPUTS:
   ARYPTR - FIRST ARRAY DIMENSION INTERESTED IN
            STRUCTURE CONTAINING:
                      OFFSET ROW OF FIELD
                      OFFSET COL OF FIELD

DESCRIPTION
   THIS MODULE OBTAINS A THE OFFSET ROW AND COL OF A FIELD FROM FIRST
   DIMENSION OF AN ARRAY BY GOING BACK UP CHILD PARENT TREE AND ADDING
   EACH SUCCESSIVE PARENT'S ROW AND COL TO SUM OF CHILDREN'S FOR ALL

3-132
DIMENSIONS OF THE ARRAY.

ARGUMENTS:

----------
DP = FIELD *
PARPTR = FIELD **
ARYPOS = POSITION *

INCLUDE FILES:

---------
STDTYP    - STANDARD TYPE DEFINITIONS
FPD       - FORM PROCESSOR DATA
FORM PROCESSOR Module Documentation

NAME: GATDEF
PURPOSE: GET ATTRIBUTE DEFINITION
LANGUAGE: C
MODULE TYPE: FUNCTION
FUNCTION TYPE: CHAR * ()
SOURCE FILE: GATDEF
SOURCE FILE TYPE: .C
HOST:
SUBSYSTEM: UI
SUBDIRECTORY: FP
DOCUMENTATION GROUP: FORMPROC

DESCRIPTION:
-------------

SYNOPSIS
CHAR *GATDEF(ATNAME, ADP)
  NAME ATNAME;
  ATTMAP **ADP;

INPUTS:
  ATNAME - NAME OF ATTRIBUTE

OUTPUTS:
  ADP - POINTER TO ATTRIBUTE MAP OF AN ATTRIBUTE NAME
       AND
       DEFINITION.
  RETURNS ERROR CODE OR NULL IF SUCCESSFUL.

DESCRIPTION
  TRANSLATES ATTRIBUTE NAME INTO A BIT MAP OF AN ATTRIBUTE
  DEFINITION

ARGUMENTS:
----------
  ATNAME = NAME
  ADP = ATTMAP **

INCLUDE FILES:
---------------
  STDTYP - STANDARD TYPE DEFINITIONS
  FPD - FORM PROCESSOR DATA

3-134
FPCODE - FORM PROCESSOR RETURN CODES

ROUTINES CALLED:

-------------------------
STRUPC
STRCMP
SYSMSG - SYSTEM MESSAGE ROUTINE

CALLED DIRECTLY BY:

-------------------------
ONWISC - OUTPUT (NO WAIT) / INPUT SCREEN
OPNFRM/PFREC - PROCESS FORM RECORD
OPNFRM/PAR - PROCESS ARRAY
OPNFRM/PIT - PROCESS ITEM
OPNFRM/PWI - PROCESS WINDOW
PUTATT - PUT ATTRIBUTES
PUTBAK - PUT BACKGROUND ATTRIBUTES
STUPPP - SET UP FORM PROCESSOR DATA STRUCTURES

USED IN MAIN PROGRAM(S):

-------------------------
MONITR/MAI - MAIN MODULE FOR MONITOR/UIS/FP PROCESS

3-135
FORM PROCESSOR Module Documentation

NAME: GDATA
PURPOSE: GET DATA
LANGUAGE: C
MODULE TYPE: FUNCTION
FUNCTION TYPE: FORTRAN VOID ()
SOURCE FILE: GDATA
SOURCE FILE TYPE: .C
HOST: 
SUBSYSTEM: UI
SUBDIRECTORY: FP
DOCUMENTATION GROUP: FORMPROC

DESCRIPTION:

SYNOPSIS
FORTRAN VOID GDATA(INSTID, EWPATH, FDATA, CODEP)
INT *INSTID;
EPATH EWPATH;
CHAR *FDATA;
CHAR CODEP[];

INPUTS:
INSTID - INSTANCE ID (PREV OR CURRNT)
EWPATH - PATH NAME

OUTPUTS:
FDATA - REQUESTED DATA
CODEP - RETURN CODE

DESCRIPTION
GDATA IS USED TO GET USER ENTERED DATA. THE DATA CAN BE
FROM A FORM, WINDOW, ARRAY, OR FIELD DEPENDING ON THE PATH
( EWPATH ).

ARGUMENTS:

INSTID = INT *
EWPATH = EPATH
FDATA = CHAR *
CODEP = CHAR []

3-136
INCLUDE FILES:

- STDTYP  - STANDARD TYPE DEFINITIONS
- FPD     - FORM PROCESSOR DATA
- FPCODE  - FORM PROCESSOR RETURN CODES
- FPPARM  - FORM PROCESSOR PARAMETERS

ROUTINES CALLED:

- ESCPY     - EXTERNAL STRING COPY
- PTHPTR    - GET PATH POINTER
- GDATA/GETBUF - GET BUFFER
- SYSMSG    - SYSTEM MESSAGE ROUTINE
- MEMCPY    

CALLED DIRECTLY BY:

- CALLFP   - CALL FP ROUTINES
- UIS      - USR INTERFACE SERVICES

USED IN MAIN PROGRAM(S):

- MONITR/MAI - MAIN MODULE FOR MONITOR/UIS/FP PROCESS
FORM PROCESSOR Module Documentation

NAME: GDATA/GETBUF
PURPOSE: GET BUFFER
LANGUAGE: C
MODULE TYPE: SUBROUTINE
FUNCTION TYPE: VOID ()
SOURCE FILE: GDATA
SOURCE FILE TYPE: .C
HOST:
SUBSYSTEM: UI
SUBDIRECTORY: FP
DOCUMENTATION GROUP: FORMPROC

DESCRIPTION:

DESCRIPTION
GETBUF PUTS THE CONTENTS OF ALL FIELDS CONTAINED IN THE DATA AREA SPECIFIED BY 'DP' INTO THE BUFFER FDATA. IT CALLS ITSELF TO GET THE CONTENTS OF SUBAREAS (FORMS, ITEMS, ETC.) WITHIN THE SPECIFIED AREA.

ARGUMENTS:

-----------
DP = 'FIELD '

INCLUDE FILES:

-----------
STDTYP - STANDARD TYPE DEFINITIONS
FPD - FORM PROCESSOR DATA
FPCODE - FORM PROCESSOR RETURN CODES
FPPARM - FORM PROCESSOR PARAMETERS

ROUTINES CALLED:

-----------
GDATA/GETBUF - GET BUFFER
BLEN
CBPTR
MEMCPY
CALLED DIRECTLY BY:

GDATA/GETBUF - GET BUFFER
GDATA      - GET DATA

USED IN MAIN PROGRAM(S):

MONITR/MAI - MAIN MODULE FOR MONITOR/UIS/FP PROCESS
FORM PROCESSOR Module Documentation

NAME: GDATLN
PURPOSE: GET DATA LENGTH
LANGUAGE: C
MODULE TYPE: FUNCTION
FUNCTION TYPE: FORTRAN VOID ()
SOURCE FILE: GDATLN
SOURCE FILE TYPE: .C
HOST:
SUBSYSTEM: UI
SUBDIRECTORY: FP
DOCUMENTATION GROUP: FORMPROC

DESCRIPTION:

SYNOPSIS
FORTRAN VOID GDATLN(EWPATH, LEN, CODEP)
       EPATH EWPATH;
       INT *LEN;
       CHAR CODEP[ ];

INPUTS:
   EWPATH - PATH NAME

OUTPUTS:
   LEN  - LENGTH OF DATA
   CODEP - RETURN CODE

DESCRIPTION
GDATLN GETS THE LENGTH OF THE DATA CORRESPONDING TO THE
FORM, WINDOW, 
OR ARRAY SPECIFIED BY THE PATH.

ARGUMENTS:

EWPATH = EPATH
LEN = INT *
CODEP = CHAR []

INCLUDE FILES:

STDTYP - STANDARD TYPE DEFINITIONS

3-140
FPD       -  FORM PROCESSOR DATA
FPCODE    -  FORM PROCESSOR RETURN CODES
FPPARM    -  FORM PROCESSOR PARAMETERS

ROUTINES CALLED:
------------------
ESCPY     -  EXTERNAL STRING COPY
PTHPTR    -  GET PATH POINTER
GDATLN/GBUFLN - GET BUFFER LENGTH
MEMCPY

CALLED DIRECTLY BY:
-------------------
CALLFP    -  CALL FP ROUTINES

USED IN MAIN PROGRAM(S):
------------------------
MONITR/MAI - MAIN MODULE FOR MONITOR/UIS/FP PROCESS
FORM PROCESSOR Module Documentation

NAME: GDATLN/GBUFLN
PURPOSE: GET BUFFER LENGTH
LANGUAGE: C
MODULE TYPE: FUNCTION
FUNCTION TYPE: INT (
SOURCE FILE: GDATLN
SOURCE FILE TYPE: .C
HOST:
SUBSYSTEM: UI
SUBDIRECTORY: FP
DOCUMENTATION GROUP: FORMPROC

DESCRIPTION:

DESCRIPTION
RETURNS THE LENGTH OF THE SPECIFIED BUFFER

ARGUMENTS:

--------
DP = FIELD

INCLUDE FILES:

---------
STDTYPE - STANDARD TYPE DEFINITIONS
FPD - FORM PROCESSOR DATA
FPCODE - FORM PROCESSOR RETURN CODES
FPARM - FORM PROCESSOR PARAMETERS

ROUTINES CALLED:

----------
GDATLN/GBUFLN - GET BUFFER LENGTH
BLEN

CALLED DIRECTLY BY:

-----------
GDATLN/GBUFLN - GET BUFFER LENGTH
GDATLN - GET DATA LENGTH

USED IN MAIN PROGRAM(S)
MONITR/MAI - MAIN MODULE FOR MONITOR/UIS/FP PROCESS
FORM PROCESSOR Module Documentation

NAME: GDVINP
PURPOSE: GET DEVICE INPUT
LANGUAGE: C
MODULE TYPE: FUNCTION
FUNCTION TYPE: CHAR *( )
SOURCE FILE: GDVINP
SOURCE FILE TYPE: .C
HOST:
SUBSYSTEM: UI
SUBDIRECTORY: FP
DOCUMENTATION GROUP: FORMPROC

DESCRIPTION:

SYNOPSIS

CHAR *GDVINP(PDPTTR, MSGBUF, LEN, APNAM, APCHAN)

PD *PDPTTR;
CHAR **MSGBUF;
INT *LEN;
NAME APNAM;
CHAN APCHAN;

INPUTS:
PDPTTR - POINTER TO USER'S PHYSICAL DEVICE
MSGBUF - CONTAINS DATA FROM DEVICE DRIVER
LEN - LENGTH OF MSGBUF

OUTPUTS:
APNAM - NAME OF AP STRUCTURE WILL BE FOR - FROM NTM
APCHAN - UNIQUE INSTANCE OF AP - FROM NTM
RETURNS STANDARD RETURN CODE FOR FORM PROCESSOR

DESCRIPTION

THIS MODULE IS CALLED BY THE MONITOR TO SETUP THE FPD STRUCTURE
AND GET INPUT FROM THE DEVICE DRIVER RETURNING THE APPLICATION NAME
AND CHANNEL OF APPLICATION FOR WHICH THE DATA WAS FOR. IF
THE RCODE
RETURNED IS INPNCHMPL INPUT WAS NOT COMPLETED.

ARGUMENTS:

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PS 620144200
1 November 1985

--------
PDPtr = PD ' 
MSGbuf = CHAR ** 
LEN = INT ' 
APnam = NAME 
APchan = CHAN 
--------

INCLUDE FILES:
--------
STDtyp - STANDARD TYPE DEFINITIONS
ST Dio - **** PURPOSE NOT FOUND BY STRIPPER ****
FPD - FORM PROCESSOR DATA
FPCODE - FORM PROCESSOR RETURN CODES
FUNCTS - FUNCTION DEFINITIONS
CTLCHR - CONTROL CHARACTERS
--------

ROUTINES CALLED:
--------
BLDCMD  
MEMSET  
PUTW  
FWRITE  
SYSMSG  - SYSTEM MESSAGE ROUTINE
FNFPWN  - FIND FORM PROCESSOR WINDOW
PDVOTP  - PUT DEVICE OUTPUT
FTELL  
FCLOSE  
MEMCPY  
STRLEN  
INSCR  - INPUT SCREEN
GVTICMD  
--------

CALLED DIRECTLY BY:
--------
MONITR/MAI - MAIN MODULE FOR MONITOR/UIS/FP PROCESS

USED IN MAIN PROGRAM(S):
--------
MONITR/MAI - MAIN MODULE FOR MONITOR/UIS/FP PROCESS

3-145
NAME: GETATT
PURPOSE: GET ATTRIBUTE
LANGUAGE: C
MODULE TYPE: FUNCTION
FUNCTION TYPE: FORTRAN VOID ()
SOURCE FILE: GETATT
SOURCE FILE TYPE: .C
HOST:
SUBSYSTEM: UI
SUBDIRECTORY: FP
DOCUMENTATION GROUP: FORMPROC

DESCRIPTION:

SYNOPSIS
FORTRAN VOID GETATT(EWPATH, DUR, ATTRBT, RCODE)

INPUTS:
EWPATH - QUALIFIED NAME OF FIELD OF WHICH CALLER WISHES ATTRIBUTES
DUR - PERM/TEMP FLAG

OUTPUTS:
ATTRBT - NAME OF ATTRIBUTE
RCODE - RETURN CODE

DESCRIPTION
GETATT GETS THE ATTRIBUTE IDENTIFIERS FOR ANY ITEM FIELD.

ARGUMENTS:

EWPATH = EPATH
DUR = INT '
ATTRBT = ENAME
RCODE = CHAR []

INCLUDE FILES:

3-146
STDYP  - STANDARD TYPE DEFINITIONS
FPD    - FORM PROCESSOR DATA
FPCODE - FORM PROCESSOR RETURN CODES
FPPARM - FORM PROCESSOR PARAMETERS

ROUTINES CALLED:

---
ESCPY   - EXTERNAL STRING COPY
PTHPTR  - GET PATH POINTER
SYSMSG  - SYSTEM MESSAGE ROUTINE
MEMSET
STRLEN
MEMCPY

CALLED DIRECTLY BY:

---
CALLFP  - CALL FP ROUTINES

USED IN MAIN PROGRAM(S):

---
MONITR/MAI - MAIN MODULE FOR MONITOR/UIS/FP PROCESS
FORM PROCESSOR Module Documentation

NAME: GETBAK
PURPOSE: GET BACKGROUND ATTRIBUTE
LANGUAGE: C
MODULE TYPE: FUNCTION
FUNCTION TYPE: FORTRAN VOID ()
SOURCE FILE: GETBAK
SOURCE FILE TYPE: .C
HOST: UI
SUBSYSTEM: FP
SUBDIRECTORY: FP
DOCUMENTATION GROUP: FORMPROC

DESCRIPTION:

SYNOPSIS

FORTRAN VOID GETATT(EWPATH, DUR, ATTRBT, RCODE)

INPUTS:

EWPATH = QUALIFIED NAME OF FIELD OF WHICH CALLER WISHES ATTRIBUTES
DUR = PERM/TEMP FLAG

OUTPUTS:

ATTRBT = NAME OF ATTRIBUTE
RCODE = RETURN CODE

DESCRIPTION

GETBAK GETS THE ATTRIBUTE IDENTIFIERS FOR WINDOW AND FORMS.

ARGUMENTS:

EWPATH = EPATH
DUR = INT *
ATTRBT = ENAME
RCODE = CHAR []

INCLUDE FILES:
STDTYP  -  STANDARD TYPE DEFINITIONS
FPD    -  FORM PROCESSOR DATA
FPCODE -  FORM PROCESSOR RETURN CODES
FPARM  -  FORM PROCESSOR PARAMETERS

ROUTINES CALLED:

ESCPY   -  EXTERNAL STRING COPY
PTHPTR  -  GET PATH POINTER
SYSMSG  -  SYSTEM MESSAGE ROUTINE
MEMSET
STRLEN
MEMCPY

CALLED DIRECTLY BY:

CALLFP  -  CALL FP ROUTINES

USED IN MAIN PROGRAM(S):

MONITR/MAI - MAIN MODULE FOR MONITOR/UIS/FP PROCESS
FORM PROCESSOR Module Documentation

NAME: GETCUR
PURPOSE: GET CURSOR POSITION
LANGUAGE: C
MODULE TYPE: FUNCTION
FUNCTION TYPE: FORTRAN VOID (
SOURCE FILE: GETCUR
SOURCE FILE TYPE: .C
HOST:
SUBSYSTEM: UI
SUBDIRECTORY: FP
DOCUMENTATION GROUP: FORMPROC

DESCRIPTION:

SYNOPSIS
FORTRAN VOID GETCUR(FQ_NAM, TYPE, ROW, COL, RCODE)
    EPATH FQ_NAM;
    CHAR *TYPE;
    INT *ROW;
    INT *COL;
    CHAR RCODE[];

OUTPUTS:
FQ_NAM = FULLY QUALIFIED NAME OF FIELD IN WHICH CURSOR LIES
    - INITIALIZED TO SPACES
    ARRAYS - DIMENSIONS IN WHICH CURSOR FOUND INCLUDED
    WINDOWS - PAGE ON WHICH CURSOR FOUND INCLUDED
TYPE = TYPE OF FIELD IN WHICH CURSOR FOUND
    - INITIALIZED TO SPACES
ROW = ROW WITHIN FIELD - INITIALIZED TO ABSOLUTE ROW ON
    SCREEN
COL = COL WITHIN FIELD - INITIALIZED TO ABSOLUTE COL ON
    SCREEN
RCODE = RETURNS ERROR IF FULLY QUALIFIED NAME TOO
    LONG

DESCRIPTION

THIS ROUTINE RETURNS THE FULLY QUALIFIED NAME OF THE
FIELD IN
WHICH THE CURSOR IS FOUND [THE DIMENSIONS (IF ANY) OF
ARRAY IN WHICH

3-150
IT LIES AS WELL AS PAGE NUMBER IS INCLUDED IN FULLY
QUALIFIED NAME]
AND ROW AND COLUMN WITHIN THIS FIELD

ARGUMENTS:
-------------
FQ_NAME = EPATH
TYPE = CHAR *
ROW = INT *
COL = INT *
RCODE = CHAR []

INCLUDE FILES:
-----------------
STD_TYP - STANDARD TYPE DEFINITIONS
FPD - FORM PROCESSOR DATA
FP_CODE - FORM PROCESSOR RETURN CODES
FP_PARM - FORM PROCESSOR PARAMETERS

ROUTINES CALLED:
-------------------
MALLOC
SPRINTF
GETCUR/CONCAT - CONCATENATE STRING TO CURRENT NAME
ACRPOS - ABSOLUTIZE CURSOR POSITION OF FIELD
MEMSET
FREE
SYSMSG - SYSTEM MESSAGE ROUTINE
MEMCPY
CURPOS - GET CURSOR POSITION

CALLED DIRECTLY BY:
---------------------
CALLFP - CALL FP ROUTINES

USED IN MAIN PROGRAM(S):
-------------------------
MONITR/MAI - MAIN MODULE FOR MONITOR/UIS/FP PROCESS
FORM PROCESSOR Module Documentation

NAME: GETCUR/CONCAT
PURPOSE: CONCATENATE STRING TO CURRENT NAME
LANGUAGE: C
MODULE TYPE: SUBROUTINE
FUNCTION TYPE: VOID ()
SOURCE FILE: GETCUR
SOURCE FILE TYPE: .C
HOST: SUBSYSTEM: UI
SUBDIRECTORY: FP
DOCUMENTATION GROUP: FORMPROC

DESCRIPTION:

ARGUMENTS:

STR = CHAR [ ]

INCLUDE FILES:

- STDTYP - STANDARD TYPE DEFINITIONS
- FPD - FORM PROCESSOR DATA
- FPCODE - FORM PROCESSOR RETURN CODES
- FPPARM - FORM PROCESSOR PARAMETERS

ROUTINES CALLED:

- MEMCPY
- STRLEN

CALLED DIRECTLY BY:

- GETCUR - GET CURSOR POSITION

USED IN MAIN PROGRAM(S):

- MONITR/MAI - MAIN MODULE FOR MONITOR/UIS/FP PROCESS

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FORM PROCESSOR Module Documentation

NAME: GOFPTR
PURPOSE: GET OPEN FROM POINTER
LANGUAGE: C
MODULE TYPE: FUNCTION
FUNCTION TYPE: FIELD *( )
SOURCE FILE: GOFPTR
SOURCE FILE TYPE: C
HOST:
SUBSYSTEM: UI
SUBDIRECTORY: FP
DOCUMENTATION GROUP: FORMPROC

DESCRIPTION:

SYNOPSIS
FIELD 'GOFPTR(FNAME)
NAME FNAME:

INPUTS:
FNAME - NAME OF FORM TO GET POINTER TO

OUTPUTS:
RETURNS POINTER TO FORM ON OPEN LIST

DESCRIPTION
RETURNS A POINTER TO THE SPECIFIED FORM ON THE OPEN LIST OR NULL IF NOT FOUND.

ARGUMENTS:

FNAME = NAME

INCLUDE FILES:

STDTYP - STANDARD TYPE DEFINITIONS
FPD - FORM PROCESSOR DATA

ROUTINES CALLED:

3-153
STRCMP

CALLED DIRECTLY BY:

- ADDELM - ADD ELEMENT
- CLSFRM - CLOSE FORM
- COPFRM - COPY FORM
- OPNFRM/PFR - PROCESS FORM
- OPNFRM - OPEN FORM

USED IN MAIN PROGRAM(S):

- MONITRM/MAI - MAIN MODULE FOR MONITOR/UIS/FP PROCESS
FORM PROCESSOR Module Documentation

NAME: GPAGE
PURPOSE: GET PAGE
LANGUAGE: C
MODULE TYPE: FUNCTION
FUNCTION TYPE: FORTRAN VOID()
SOURCE FILE: GPAGE
SOURCE FILE TYPE: .C
HOST:
SUBSYSTEM: UI
SUBDIRECTORY: FP
DOCUMENTATION GROUP: FORMPROC

DESCRIPTION:

SYNOPSIS
FORTRAN VOID GPAGE(EWPATH, PNUMP. EFNAME, CODEP)
EPATH EWPATH:
INT *PNUMP;
ENAME *EFNAME;
CHAR CODEP[];

INPUTS:
EWPATH - PATH NAME OF WINDOW
PNUMP - PAGE NUMBER IN WINDOW

OUTPUTS:
EFNAME - FORM NAME
CODEP - RETURN CODE

DESCRIPTION
RETURNS THE NAME OF THE FORM ON THE SPECIFIED PAGE IN THE WINDOW.

ARGUMENTS:

EWPATH = EPATH
PNUMP = INT *
EFNAME = ENAME
CODEP = CHAR []

INCLUDE FILES:
STDTYP - STANDARD TYPE DEFINITIONS
FPD - FORM PROCESSOR DATA
FPCODE - FORM PROCESSOR RETURN CODES
FPARM - FORM PROCESSOR PARAMETERS

ROUTINES CALLED:

ESCPY - EXTERNAL STRING COPY
PTHPTR - GET PATH POINTER
SYSMSGR - SYSTEM MESSAGE ROUTINE
MEMCPY
STRLEN
MEMSET

CALLED DIRECTLY BY:

CALLFP - CALL FP ROUTINES

USED IN MAIN PROGRAM(S):

MONITR/MAI - MAIN MODULE FOR MONITOR/UIS/FP PROCESS
FORM PROCESSOR Module Documentation

NAME: GWINDO
PURPOSE: GET WINDOW
LANGUAGE: C
MODULE TYPE: FUNCTION
FUNCTION TYPE: FORTRAN VOID ()
SOURCE FILE: GWINDO
SOURCE FILE TYPE: .C
HOST: 
SUBSYSTEM: UI
SUBDIRECTORY: FP
DOCUMENTATION GROUP: FORMPROC

DESCRIPTION:

SYNOPSIS
FORTRAN VOID GWINDO(EWPATH, NUMPP, CODEP)
  EPATH  EWPATH:
  INT   'NUMPP:
  CHAR  CODEP[] :

INPUTS
EWPATH - PATH NAME OF WINDOW

OUTPUTS:
NUMPP  - NUMBER OF PAGES IN WINDOW
CODEP  - RETURN CODE

DESCRIPTION
GETS THE NUMBER OF PAGES IN A WINDOW.

ARGUMENTS:

EWPATH = EPATH
NUMPP  = INT '
CODEP  = CHAR []

INCLUDE FILES:

STDYP  - STANDARD TYPE DEFINITIONS
FPD    - FORM PROCESSOR DATA
FPDCODE - FORM PROCESSOR RETURN CODES
FPPARM - FORM PROCESSOR PARAMETERS

ROUTINES CALLED:

- ESCPY - EXTERNAL STRING COPY
- PTHPTR - GET PATH POINTER
- MEMCPY

CALLED DIRECTLY BY:

- CALLFP - CALL FP ROUTINES

USED IN MAIN PROGRAM(S):

- MONITR/MAI - MAIN MODULE FOR MONITOR/UIS/FP PROCESS
FORM PROCESSOR Module Documentation

NAME: INITVT
PURPOSE: INITIAL VIRTUAL TERMINAL INTERFACE
LANGUAGE: C
MODULE TYPE: SUBROUTINE
FUNCTION TYPE: VOID ()
SOURCE FILE: INITVT
SOURCE FILE TYPE: .C
HOST: SUBSYSTEM: UI
SUBDIRECTORY: FP
DOCUMENTATION GROUP: FORMPROC

DESCRIPTION:

SYNOPSIS

INITVT(RCODE)
CHAR RCODE[]

INPUTS/OUTPUTS:

INPUTS:
NONE

OUTPUTS:
RCODE - STANDARD FORM PROCESSOR RETURN CODE

DESCRIPTION

SET VTI MODE FLAG AND INITIALIZE MAX BUFFER LENGTH TO 0

ARGUMENTS:

RCODE = CHAR []

INCLUDE FILES:

STDTYP - STANDARD TYPE DEFINITIONS
FPD - FORM PROCESSOR DATA
FPCODE - FORM PROCESSOR RETURN CODES

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ROUTINES CALLED:
-------------------
MEMCPY

CALLED DIRECTLY BY:
---------------------
CALLFP - CALL FP ROUTINES

USED IN MAIN PROGRAM(S):
------------------------
MONITR/MAI - MAIN MODULE FOR MONITOR/UIS/FP PROCESS
FORM PROCESSOR Module Documentation

NAME: INQLDV
PURPOSE: INQUIRE LOGICAL DEVICE
LANGUAGE: C
MODULE TYPE: FUNCTION
FUNCTION TYPE: FORTRAN VOID ()
SOURCE FILE: INQLDV
SOURCE FILE TYPE: .C
HOST: SUBSYSTEM: UI
SUBDIRECTORY: FP
DOCUMENTATION GROUP: FORMPROC

DESCRIPTION:

---------------

SYNOPSIS

FORTRAN VOID INQLDV(LDWNID,RCODE)
    INT *LDWNID;
    CHAR RCODE[];

INPUTS/OUTPUTS:

INPUTS:
    ADDRESS OF:
        LOGICAL DEVICES TOP WINDOW ID
        RETURN CODE

OUTPUTS:
    LDWNID - LOGICAL DEVICES TOP WINDOW ID
    RCODE - RETURN CODE

DESCRIPTION

THIS MODULE RETURNS LOGICAL DEVICE ON WHICH APPLICATION CURRENTLY RUNNING.
IF NO LOGICAL DEVICE FOUND WILL RETURN NFPDSTRC ERROR.

ARGUMENTS:

---------

LDWNID = INT *
RCODE = CHAR []
INCLUDE FILES:

-----------
STDTYP    - STANDARD TYPE DEFINITIONS
FPD       - FORM PROCESSOR DATA
FPCODE    - FORM PROCESSOR RETURN CODES

ROUTINES CALLED:

---------------
MEMCPY

called directly by:

------------------
CALLFP      - CALL FP ROUTINES

used in main program(s):

--------------
MONITR/MAI - MAIN MODULE FOR MONITOR/UIS/FP PROCESS
FORM PROCESSOR Module Documentation

NAME: INSCR
PURPOSE: INPUT SCREEN
LANGUAGE: C
MODULE TYPE: FUNCTION
FUNCTION TYPE: CHAR *
SOURCE FILE: OISCR
SOURCE FILE TYPE: .C
HOST:
SUBSYSTEM: UI
SUBDIRECTORY: FP
DOCUMENTATION GROUP: FORMPROC

DESCRIPTION:

SYNOPSIS

CHAR *INSCR(PDPTR, WPTR, VBPtr, VBEND)

ARGUMENTS:

PDPTR = PD *
WPTR = FIELD *
VBPtr = CHAR *
VBEND = CHAR *

INCLUDE FILES:

3-163
STDTYPE  - STANDARD TYPE DEFINITIONS
STDIO    - **** PURPOSE NOT FOUND BY STRIPPER ****
CTYPE    - **** PURPOSE NOT FOUND BY STRIPPER ****
TIME     - **** PURPOSE NOT FOUND BY STRIPPER ****
FPD      - FORM PROCESSOR DATA
FPCODE   - FORM PROCESSOR RETURN CODES
FPARM    - FORM PROCESSOR PARAMETERS
VTICOM   - VTI COMMUNICATION DEFINITIONS
FUNCTS   - FUNCTION DEFINITIONS
CTLCHR   - CONTROL CHARACTERS

ROUTINES CALLED:
---------------
OISCR/EVTBUF   - EMPTY VTI BUFFER
FUISWN         - FIND UIS WINDOW
SYSMSG         - SYSTEM MESSAGE ROUTINE
FREMAG         -          
OISCR/RSTMAT   - RESET TEMPORARY ATTRIBUTES
PFNP           -          
MEMCMP         -          
PMSGCLC        - PUT MESSAGE LINE CODE
OISCR/FVTBUF   - FILL VTI BUFFER
DSPMSG         -          

CALLED DIRECTLY BY:
---------------
GDVinp        - GET DEVICE INPUT
FORM PROCESSOR Module Documentation

NAME: MABSAT
PURPOSE: MAP ABSOLUTE ATTRIBUTE
LANGUAGE: C
MODULE TYPE: SUBROUTINE
FUNCTION TYPE: VOID ()
SOURCE FILE: MABSAT
SOURCE FILE TYPE: .C
HOST: SUBSYSTEM: UI
SUBDIRECTORY: FP
DOCUMENTATION GROUP: FORMPROC

DESCRIPTION:

SYNOPSIS
VOID MABSAT(BADP, ATTRIB, FADP)
  ATTDEF *BADP;
  ATTMAP *ATTRIB;
  ATTDEF *FADP;

INPUTS:
BADP = BACKGROUND ATTRIBUTE (ABSOLUTE)
ATTRIB = FOREGROUND ATTRIBUTE TO COMBINE WITH BACKGROUND

OUTPUTS:
FADP = FOREGROUND ATTRIBUTE (ABSOLUTE)

DESCRIPTION
BUILD AN ATTRIBUTE DEFINITION BASED ON A BACKGROUND ATTRIBUTE
DEFINITION AND AN ATTRIBUTE NAME.

ARGUMENTS:

BADP = ATTDEF *
ATTRIB = ATTMAP *
FADP = ATTDEF *

INCLUDE FILES:

STDTYP - STANDARD TYPE DEFINITIONS

3-165
FPD - FORM PROCESSOR DATA

ROUTINES CALLED:

----
STRAST

CALLED DIRECTLY BY:

--------------
OISCR/GATINF - GET ATTRIBUTE INFO
PUTATT/AABSAT - ATTRIBUTE ABSOLUTE SET ATTRIBUTE
RSVATT/RSVRST - RESOLVE REST

USED IN MAIN PROGRAM(S):

---------------
MONITR/MAI - MAIN MODULE FOR MONITOR/UIS/FP PROCESS
FORM PROCESSOR Module Documentation

NAME: MAKAP
PURPOSE: MAKE APPLICATION STRUCTURE
LANGUAGE: C
MODULE TYPE: FUNCTION
FUNCTION TYPE: CHAR *
SOURCE FILE: MAKAP
SOURCE FILE TYPE: .C
HOST: 
SUBSYSTEM: UI
SUBDIRECTORY: FP
DOCUMENTATION GROUP: FORMPROC

DESCRIPTION:

SYNOPSIS
CHAR *MAKAP(PDPTR, APNAM, APCHAN)
PDPTR *PDTR
NAME APNAM;
CHAN APCHAN;

INPUTS/OUTPUTS:

INPUTS:
PDPTR - POINTER TO PHYSICAL DEVICE STRUCTURE
APNAM - NAME OF AP STRUCTURE WILL BE FOR - FROM NTM
APCHAN - UNIQUE INSTANCE OF AP - FROM NTM

OUTPUTS:
RETURNS NULL IF SUCCESSFUL ELSE RETURNS ADDRESS OF ERROR CODE

DESCRIPTION
THIS MODULE CREATES AND INSERTS A AP DATA STRUCTURE FOR A USER

ARGUMENTS:

PDPTR = PD *
APNAM = NAME
APCHAN = CHAN

3-167
INCLUDE FILES:

STDTYP  -  STANDARD TYPE DEFINITIONS
FPD     -  FORM PROCESSOR DATA
FP CODE -  FORM PROCESSOR RETURN CODES

ROUTINES CALLED:

CALLOC
SYMS MSG -  SYSTEM MESSAGE ROUTINE
ESCPY    -  EXTERNAL STRING COPY
SBI T
ATO I
STUPFP   -  SET UP FORM PROCESSOR DATA STRUCTURES
RMVAP    -  REMOVE APPLICATION
MAKFPD   -  MAKE FORM PROCESSOR DATA (LOGICAL DEVICE STRUCTURE)
CFREE

CALLED DIRECTLY BY:

UIS/STR TAP -  START APPLICATION

USED IN MAIN PROGRAM(S):

MONITR/MAI -  MAIN MODULE FOR MONITOR/UIS/FP PROCESS
FORM PROCESSOR Module Documentation

NAME:          MAKFLD
PURPOSE:       MAKE FIELD
LANGUAGE:      C
MODULE TYPE:   FUNCTION
FUNCTION TYPE: CHAR *( )
SOURCE FILE:   MAKFLD
SOURCE FILE TYPE: .C
HOST:          SUBSYSTEM UI
SUBDIRECTORY:  FP
DOCUMENTATION GROUP: FORMPROC

DESCRIPTION:

SYNOPSIS

CHAR *MAKFLD(PDP, RDP, LDP, PP, FLDNAM, ROW, COL, WIDTH, DEPTH, TYPE,
PERMAT)
REGISTER FIELD **PDP;
FIELD **RDP, **LDP, *PP;
NAME FLDNAM;
INT ROW, COL, WIDTH, DEPTH;
CHAR TYPE;
ATTMAP *PERMAT;

INPUTS/OUTPUTS:
FIELD **PDP - POINTER TO A POINTER TO BE SET TO THE NEWLY CREATED FIELD

INPUTS:
FIELD **RDP - POINTER TO SET *PDP'S NXTFLD TO: EITHER A @CONPTR, OR
@NXTFLD. *RDP IS THE VALUE YOU WANT TO SET *PDP->NXTFLD TO AND THE POINTER YOU WANT SET TO *PDP.
FIELD **LDP - POINTER TO SET *PDP'S PRVFLD TO: EITHER A @LSTPTR, OR
@PRVFLD (OR NULL IF THERE IS NONE). *LDP IS THE VALUE YOU WANT TO SET *PDP->PRVFLD TO AND THE POINTER YOU WANT TO
*PDP. IF LDP IS NULL *PDP->PRVFLD IS SET
TO NULL ONLY.

FIELD *PP - PARENT OF NEWLY CREATED FIELD.
NAME FLDNAM - NULL TERMINATED STRING WITH NAME OF NEW
FIELD.
INT ROW, COL, WIDTH, DEPTH - FOR THE NEW FIELD.
ABSOLUTE POSITIONS.
ATTMAP *PERMAT - ATTRIBUTE MAP ELEMENT TO PUT IN THIS
FIELD.

DESCRIPTION

MAKFLD CREATES A FIELD. THE FIELD'S POINTER IS RETURNED
IN PDP.
The FIELD'S PARENT IS POINTED TO BY PP. THE POSITION TO
CHAIN
IN THE FIELD IS POINTED TO BY RDP AND LDP.

ARGUMENTS:

-------------
PDP = FIELD **
RDP = FIELD **
LDP = FIELD **
PP = FIELD *
FLDNAM = NAME
ROW = INT
COL = INT
WIDTH = INT
DEPTH = INT
TYPE = CHAR
PERMAT = ATTMAP *

INCLUDE FILES:

-------------
STDTYPE - STANDARD TYPE DEFINITIONS
FPD - FORM PROCESSOR DATA
FPCCOE - FORM PROCESSOR RETURN CODES

ROUTINES CALLED:

-------------
MALLOC
SYSMSG - SYSTEM MESSAGE ROUTINE
STRCPY

CALLED DIRECTLY BY:

3-170
OPNFRM/PFREC - PROCESS FORM RECORD
OPNFRM/PAR - PROCESS ARRAY
OPNFRM/PIT - PROCESS ITEM
OPNFRM/PFR - PROCESS FORM
OPNFRM/PWI - PROCESS WINDOW
STUPFP - SET UP FORM PROCESSOR DATA STRUCTURES

USED IN MAIN PROGRAM(S):

MONITR/MAI - MAIN MODULE FOR MONITOR/UIS/FP PROCESS
NAME: MAKFPD
PURPOSE: MAKE FORM PROCESSOR DATA (LOGICAL DEVICE STRUCTURE)
LANGUAGE: C
MODULE TYPE: FUNCTION
FUNCTION TYPE: FPD ' ( )
SOURCE FILE: MAKFPD
SOURCE FILE TYPE: .C
HOST: SUBSYSTEM: UI
SUBDIRECTORY: FP
DOCUMENTATION GROUP: FORMPROC

DESCRIPTION:

SYNOPSIS
FPD 'MAKFPD(PDPtr, APPtr)
   PD 'PDPtr:
   AP 'APPtr:

INPUTS: PDPtr - POINTER TO PHYSICAL DEVICE IT WILL BELONG TO
        APPtr - POINTER TO APPLICATION IT WILL BELONG TO

OUTPUTS:
RETURNS A POINTER TO STRUCTURE CREATED IF SUCCESSFUL
ELSE NULL POINTER

DESCRIPTION
THIS MODULE CREATES A LOGICAL DEVICE STRUCTURE FOR AN
APPLICATION ON
A PARTICULAR PHYSICAL DEVICE.

ARGUMENTS:

PDPtr = PD ' APPtr = AP ' 
INCLUDE FILES:

- STDYP - STANDARD TYPE DEFINITIONS
- FPD - FORM PROCESSOR DATA

ROUTINES CALLED:

- CALLOC

CALLED DIRECTLY BY:

- MAKAP - MAKE APPLICATION STRUCTURE
- MAKUSR - MAKE USER
- OPNLDV - OPEN LOGICAL DEVICE

USED IN MAIN PROGRAM(S):

- MONITR/MAI - MAIN MODULE FOR MONITOR/UIS/FP PROCESS
FORM PROCESSOR Module Documentation

NAME: MAKPD
PURPOSE: MAKE PHYSICAL DEVICE STRUCTURE
LANGUAGE: C
MODULE TYPE: FUNCTION
FUNCTION TYPE: PD *( )
SOURCE FILE: MAKPD
SOURCE FILE TYPE: .C
HOST: 
SUBSYSTEM: UI
SUBDIRECTORY: FP
DOCUMENTATION GROUP: FORMPROC

DESCRIPTION:

SYNOPSIS
PD *MAKPD(USRPRTR, PDPRRT, PDNAM, PDCHAN, SIZ)

INPUTS/OUTPUTS:

INPUTS:
USRPRTR - POINTER TO USER FOR WHICH PHYSICAL DEVICE STRUCTURE IS BEING CREATED.
PDPRT - PHYSICAL PORT OF DEVICE
PDNAM - NAME/TYP ID OF DEVICE
PDCHAN - CHAN OF DEVICE - FROM NTM
SIZ - CONTAINS: ACTUAL MAX WIDTH OF DEVICE ACTUAL MAX DEPTH OF DEVICE

OUTPUTS:
RETURNS A POINTER TO PD STRUCTURE IF SUCCESSFUL AND A NULL POINTER IF FAILURE

DESCRIPTION
THIS MODULE CREATES AND INSERTS A STRUCTURE FOR A
PHYSICAL DEVICE FOR A USER.

ARGUMENTS:

USR PTR = USR *
PD PRT = NAME
PD NAM = NAME
PD CHAN = CHAN
SIZ = SIZE *

INCLUDE FILES:

STD TYP - STANDARD TYPE DEFINITIONS
FPD - FORM PROCESSOR DATA
FP CODE - FORM PROCESSOR RETURN CODES

ROUTINES CALLED:

CALLOC
ES CPY - EXTERNAL STRING COPY

CALLED DIRECTLY BY:

MAKUSR - MAKE USER
UIS/STRTPD - START PHYSICAL DEVICE

USED IN MAIN PROGRAM(S):

MONITR/MAI - MAIN MODULE FOR MONITOR/UIS PP PROCESS
FORM PROCESSOR Module Documentation

NAME: MAKUSR
PURPOSE: MAKE USER
LANGUAGE: C
MODULE TYPE: FUNCTION
FUNCTION TYPE: CHAR * ()
SOURCE FILE: MAKUSR
SOURCE FILE TYPE: .C
HOST: SUBSYSTEM: UI
SUBDIRECTORY: FP
DOCUMENTATION GROUP: FORMPROC

DESCRIPTION:

---------

SYNOPSIS
CHAR *MAKUSR(PDNAM, PDCHAN, MSGBUF, LEN)
    NAME PDNAM;
    CHAN PDCHAN;
    CHAR *MSGBUF;
    INT *LEN;

INPUTS/OUTPUTS:

INPUTS:
PDNAM - NAME OF THE USER'S PHYSICAL DEVICE - FROM NTM
PDCHAN - CHAN OF THE USER'S PHYSICAL DEVICE - FROM NTM
MSGBUF - CONTAINS :PDWDTH - MAX WIDTH OF PHYSICAL DEVICE
          PDDPTH - MAX DEPTH OF PHYSICAL DEVICE
LEN - LENGTH OF MESSAGE BUFFER

OUTPUTS:
IF ERROR RETURNS POINTER TO ERROR CODE ELSE RETURNS A
NULL POINTER

DESCRIPTION
THIS MODULE IS CALLED BY THE MONITOR TO CREATE AND INSERT
A USER
STRUCTURE FOR A USER; IT CALLS MAKPD TO CREATE AND INSERT
A PHYSICAL
DEVICE FOR THE USER ALSO.
ARGUMENTS:

- **PDMIN**: NAME
- **PDCHAN**: CHAN
- **MSGBUF**: CHAR *
- **LEN**: INT *

INCLUDE FILES:

- **STDTYP**: STANDARD TYPE DEFINITIONS
- **FPD**: FORM PROCESSOR DATA
- **FPCODE**: FORM PROCESSOR RETURN CODES
- **FUNCTS**: FUNCTION DEFINITIONS
- **CTLCHR**: CONTROL CHARACTERS

ROUTINES CALLED:

- **BLDCMD**
- **GVTICMD**
- **SYSMSG**: SYSTEM MESSAGE ROUTINE
- **STUPFP**: SET UP FORM PROCESSOR DATA STRUCTURES
- **TRMUSR**: TERMINATE USER
- **SPRINTF**
- **PDVOTP**
- **STRLEN**
- **MAKFPD**: MAKE FORM PROCESSOR DATA (LOGICAL DEVICE STRUCTURE)
- **RMVFPD**: REMOVE PHYSICAL DEVICE DATA STRUCTURE
- **MAKPDP**: MAKE PHYSICAL DEVICE STRUCTURE
- **CFREE**
- **CALLOC**

CALLED DIRECTLY BY:

- **MONITR/MAI**: MAIN MODULE FOR MONITOR/UIS/FP PROCESS

USED IN MAIN PROGRAM(S):

- **MONITR/MAI**: MAIN MODULE FOR MONITOR/UIS/FP PROCESS
FORM PROCESSOR Module Documentation

NAME: MONITR/GETPD
PURPOSE: GET PHYSICAL DEVICE
LANGUAGE: C
MODULE TYPE: FUNCTION
FUNCTION TYPE: PD * ()
SOURCE FILE: MONITR
SOURCE FILE TYPE: .C
HOST:
SUBSYSTEM: UI
SUBDIRECTORY: FP
DOCUMENTATION GROUP: FORMPROC

DESCRIPTION:

SYNOPSIS

STATIC PD *GETPD(PDNAM, PDCHAN)
    ENAME PDNAM;
    CHAN PDCHAN;

INPUTS:
    PDNAM - NAME OF THE USER'S PHYSICAL DEVICE
    PDCHAN - CHAN OF THE USER'S PHYSICAL DEVICE

OUTPUTS:
    RETURNS POINTER TO THE SPECIFIED PHYSICAL DEVICE
    STRUCTURE

DESCRIPTION

SEARCHES THROUGH THE PHYSICAL DEVICE STRUCTURES FOR ONE
WITH THE
SPECIFIED NAME AND CHANNEL. IF NOT FOUND, A NULL POINTER
IS RETURNED.

ARGUMENTS:

PDNAM - ENAME
PDCHAN - CHAN

INCLUDE FILES:

STDTYP - STANDARD TYPE DEFINITIONS
STDIO - ***** PURPOSE NOT FOUND BY STRIPPER *****

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FPD - FORM PROCESSOR DATA
FPDINI - FPD INITIALIZATION
FPCODE - FORM PROCESSOR RETURN CODES
FPPARM - FORM PROCESSOR PARAMETERS
NTM - NTM INTERFACE INCLUDE FILE
DBASEI - DATABASE INTERFACE
FUNCTS - FUNCTION DEFINITIONS
CTLCHR - CONTROL CHARACTERS

ROUTINES CALLED:
------------------
STRCMP
ESCPY - EXTERNAL STRING COPY

CALLED DIRECTLY BY:
---------------------
MONITR/MAI - MAIN MODULE FOR MONITOR/UIS/FP PROCESS

USED IN MAIN PROGRAM(S):
------------------------
MONITR/MAI - MAIN MODULE FOR MONITOR/UIS/FP PROCESS
FORM PROCESSOR Module Documentation

NAME: MONITR/Main
PURPOSE: MAIN MODULE FOR MONITOR/UIS/FP PROCESS
LANGUAGE: C
MODULE TYPE: SUBROUTINE
FUNCTION TYPE: VOID ()
SOURCE FILE: MONITR
SOURCE FILE TYPE: .C
HOST: SUBSYSTEM: UI
SUBDIRECTORY: FP
DOCUMENTATION GROUP: FORMPROC

DESCRIPTION:

SYNOPSIS

VOID MAIN()

DESCRIPTION

THIS MODULE IS THE MAIN MODULE FOR MONITOR/UIS/FP PROCESS. IT
MONITORS INPUT FROM NTM: DECIDING WHAT ACTION IS
REQUIRED AND CALLING
THE APPROPRIATE ROUTINE(S).

INCLUDE FILES:

_____________
STDTYPE - STANDARD TYPE DEFINITIONS
STDIO  - **** PURPOSE NOT FOUND BY STRIPPER ****
FPD - FORM PROCESSOR DATA
FPDINI - FPD INITIALIZATION
FPCODE - FORM PROCESSOR RETURN CODES
FPPARM - FORM PROCESSOR PARAMETERS
NTM - NTM INTERFACE INCLUDE FILE
DBASEI - DATABASE INTERFACE
FUNCTS - FUNCTION DEFINITIONS
CTLCHR - CONTROL CHARACTERS

ROUTINES CALLED:

_____________
BLDCMD

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INITIAL
MEMCMP
UIS - USR INTERFACE SERVICES
ESCPY - EXTERNAL STRING COPY
SPPDAP - SET FORM PROCESSOR DATA STRUCTURE FOR APPLICATION
RMVAP - REMOVE APPLICATION
CALLFP - CALL FP ROUTINES
PUTW
RMVPD - REMOVE PHYSICAL DEVICE DATA STRUCTURE
TRMUSR - TERMINATE USER
STRCHR
MAKUSR - MAKE USER
STRCMP
GVTICMD
MAX
ONWISC - OUTPUT (NO WAIT) / INPUT SCREEN
OUTSCR - OUTPUT SCREEN
FSEEK
PMSGLC - PUT MESSAGE LINE CODE
SYSMSG - SYSTEM MESSAGE ROUTINE
GDTVNP - GET DEVICE INPUT
FCLOSE
MONTR/GETPD - GET PHYSICAL DEVICE
FEOF
FERROR
FREAD
GETW
FTELL
PRINTF
MEMCPY
WRITE
MIN
PRINTF
NSEND
PUTC
TRMNAT
MEMSET
RCV
FOPEN
DBCLOSE
DBOPEN
NAME: OISCR/ADDCMD
PURPOSE: ADD COMMAND TO BUFFER
LANGUAGE: C
MODULE TYPE: SUBROUTINE
FUNCTION TYPE: VOID ()
SOURCE FILE: OISCR
SOURCE FILE TYPE: .C
HOST:
SUBSYSTEM: UI
SUBDIRECTORY: FP
DOCUMENTATION GROUP: FORMPROC

DESCRIPTION:

SYNOPSIS:

VOID ADDCMD(D, S, L)
PD *D;
CHAR *S;
INT L;

INPUTS:
D - DEVICE SENDING DATA TO
S - STRING TO ADD TO COMMAND BUFFER
L - LENGTH OF STRING

DESCRIPTION
THE SPECIFIED STRING IS ADDED TO THE (GLOBAL) COMMAND
BUFFER. IF THERE
ISN'T ENOUGH ROOM, THE BUFFER IS FLUSHED (VIA PDVOTP)
FIRST.

ARGUMENTS:

D = PD *
S = CHAR *
L = INT

INCLUDE FILES:

STDTYP - STANDARD TYPE DEFINITIONS
STDIO " *** PURPOSE NOT FOUND BY STRIPPER ***
CTYPE " *** PURPOSE NOT FOUND BY STRIPPER ***
TIME - **** PURPOSE NOT FOUND BY STRIPPER ****
FPD - FORM PROCESSOR DATA
FP CODE - FORM PROCESSOR RETURN CODES
FP ARM - FORM PROCESSOR PARAMETERS
VTICOM - VTI COMMUNICATION DEFINITIONS
FUNCTS - FUNCTION DEFINITIONS
CTLCHR - CONTROL CHARACTERS

ROUTINES CALLED:
---------------------
MEMCPY
PDVOTP - PUT DEVICE OUTPUT

CALLED DIRECTLY BY:
---------------------
OISCR/FVTBUF - FILL VTI BUFFER
OISCR/PROCFLD - PROCESS FIELD
OISCR/PROCWIN - PROCESS WINDOW

USED IN MAIN PROGRAM(S):
-------------------------
MONITR/MAI - MAIN MODULE FOR MONITOR/UIS/FP PROCESS
FORM PROCESSOR Module Documentation

NAME: OISCR/CMPALL
PURPOSE: COMPUTE ALL CALCULATED FIELDS
LANGUAGE: C
MODULE TYPE: FUNCTION
FUNCTION TYPE: CHAR *( )
SOURCE FILE: OISCR
SOURCE FILE TYPE: .C
HOST:
SUBSYSTEM: UI
SUBDIRECTORY: FP
DOCUMENTATION GROUP: FORMPROC

DESCRIPTION:

SYNOPSIS

STATIC CHAR *CMPALL(DP) 
FIELD *DP;

INPUTS:
DP - POINTER TO FIRST FIELD TO BE COMPUTED

OUTPUTS:
RETURNS A RETURN CODE

DESCRIPTION

ALL FIELDS SUBORDINATE TO THE GIVEN FIRST FIELD ARE EXAMINED; IF A FIELD HAS BEEN CHANGED (EITHER ON INPUT OR OUTPUT), ALL OF THE FIELD WHICH ARE DEPENDENT ON IT ARE RECALCULATED IF THEY HAVE NOT ALREADY BEEN CALCULATED (A FIELD IS CONSIDERED TO HAVE ALREADY BEEN CALCULATED IF IT HAS BEEN CHANGED ON OUTPUT).

ARGUMENTS:

----------
DP - FIELD *

INCLUDE FILES:

----------
STDTYP - STANDARD TYPE DEFINITIONS

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ROUTINES CALLED:

OISCR/CMPALL - COMPUTE ALL CALCULATED FIELDS
CMPFLD   - COMPUTE FIELD

CALLED DIRECTLY BY:

OISCR/DSPSCR - DISPLAY SCREEN
OISCR/CMPALL - COMPUTE ALL CALCULATED FIELDS

USED IN MAIN PROGRAM(S):

MONITR/MAI - MAIN MODULE FOR MONITOR/UIS/FP PROCESS
FORM PROCESSOR Module Documentation

NAME: OISCR/CNGMSG
PURPOSE: CHECK FOR AND PROCESS CHANGE MESSAGE REQUESTS
LANGUAGE: C
MODULE TYPE: FUNCTION
FUNCTION TYPE: CHAR * ()
SOURCE FILE: OISCR
SOURCE FILE TYPE: .C
HOST: UI
SUBSYSTEM: FP
DOCUMENTATION GROUP: FORMPROC

DESCRIPTION:

SYNOPSIS

STATIC CHAR *CNGMSG(COUNT)
INT COUNT;
INPUTS:
COUNT - MESSAGE COUNT RECEIVED FROM DEVICE
OUTPUTS:
RETURNS A RETURN CODE

DESCRIPTION

CNGMSG ALLOWS THE USER TO SCROLL THROUGH THE MESSAGES IN THE MESSAGE LINE BUFFER. IT PUTS THE MESSAGE CORRESPONDING TO THE NUMBER SPECIFIED BY THE USER INTO THE MESSAGE LINE ON THE TERMINAL SCREEN.

ARGUMENTS:

----------
COUNT = INT

INCLUDE FILES:

----------
STDTYPE - STANDARD TYPE DEFINITIONS
STDIO - ***** PURPOSE NOT FOUND BY STRIPPER *****
CTYPE - ***** PURPOSE NOT FOUND BY STRIPPER *****
TIME - ***** PURPOSE NOT FOUND BY STRIPPER *****
FPD - FORM PROCESSOR DATA
FPCODE - FORM PROCESSOR RETURN CODES
FPPARM - FORM PROCESSOR PARAMETERS
VTICOM - VTI COMMUNICATION DEFINITIONS
FUNCTS - FUNCTION DEFINITIONS
CTLCHR - CONTROL CHARACTERS

Routines Called:
SYSTEM MESSAGE ROUTINE

Called Directly By:
EMPTY VTI BUFFER
FORM PROCESSOR Module Documentation

NAME: OISCR/DSPSCR
PURPOSE: DISPLAY SCREEN
LANGUAGE: C
MODULE TYPE: SUBROUTINE
FUNCTION TYPE: VOID ()
SOURCE FILE: OISCR
SOURCE FILE TYPE: .C
HOST:
SUBSYSTEM: UI
SUBDIRECTORY: FP
DOCUMENTATION GROUP: FORMPROC

DESCRIPTION:

SYNOPSIS
STATIC VOID DSPSCR()

DESCRIPTION
DISPLAY ALL INTERNALLY CALCULATED FIELDS INCLUDING ALL USER CALCULATED FIELDS.

INCLUDE FILES:

STDTYPE - STANDARD TYPE DEFINITIONS
STDIO  - **** PURPOSE NOT FOUND BY STRIPPER ****
CTYPE  - **** PURPOSE NOT FOUND BY STRIPPER ****
TIME   - **** PURPOSE NOT FOUND BY STRIPPER ****
FPD    - FORM PROCESSOR DATA
FPCODE  - FORM PROCESSOR RETURN CODES
FPFARM  - FORM PROCESSOR PARAMETERS
VTICOM  - VTI COMMUNICATION DEFINITIONS
FUNCTS  - FUNCTION DEFINITIONS
CTLCHR  - CONTROL CHARACTERS

ROUTINES CALLED:

OISCR/CMPALL - COMPUTE ALL CALCULATED FIELDS
PDATA    - PUT FORM DATA
SPRINTF
LOCAITIME

3-188
TIME

CALLED DIRECTLY BY:

OISCR/FVTBUF - FILL VTI BUFFER

USED IN MAIN PROGRAM(S):

MONITR/MAI - MAIN MODULE FOR MONITOR/UIS/FP PROCESS
NAME: OISCR/EVTBUF
PURPOSE: EMPTY VTI BUFFER
LANGUAGE: C
MODULE TYPE: FUNCTION
FUNCTION TYPE: CHAR *( )
SOURCE FILE: OISCR
SOURCE FILE TYPE: .C
HOST:
SUBSYSTEM: UI
SUBDIRECTORY: FP
DOCUMENTATION GROUP: FORMPROC

DESCRIPTION:

SYNOPSIS

STATIC CHAR *EVTBUF(PD PTR, VB PTR, VBEND)
   PD *PD PTR;
   CHAR *VB PTR, *VBEND:

INPUTS:
   PD PTR - POINTER TO PHYSICAL DEVICE INPUT IS FROM
   VB PTR - POINTER TO START OF INPUT BUFFER
   VB END - POINTER TO (CHARACTER PAST) END OF INPUT BUFFER

OUTPUTS:
   RETURNS A RETURN CODE

DESCRIPTION
   GETS DATA FROM THE VIRTUAL TERMINAL BUFFER AND STORES IT
   IN THE FPD DATA STRUCTURE.

ARGUMENTS:

   PD PTR = PD *
   VB PTR = CHAR *
   VB END = CHAR *

INCLUDE FILES:

-----

STDTYP - STANDARD TYPE DEFINITIONS
STDIO - **** PURPOSE NOT FOUND BY STRIPPER ****

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CTYPE - **** PURPOSE NOT FOUND BY STRIPPER ****
TIME - **** PURPOSE NOT FOUND BY STRIPPER ****
FPD - FORM PROCESSOR DATA
FPCODE - FORM PROCESSOR RETURN CODES
FPARM - FORM PROCESSOR PARAMETERS
VTICOM - VTI COMMUNICATION DEFINITIONS
FUNCTS - FUNCTION DEFINITIONS
CTLCHR - CONTROL CHARACTERS

ROUTINES CALLED:
-----------------
STRASN
MEMSET
CBPTR
MEMCPY
BLEN
ISPRINT
FNFPWN - FIND FORM PROCESSOR WINDOW
MATOI
OISCR/CNGMSG - CHECK FOR AND PROCESS CHANGE MESSAGE REQUESTS
SYMSG - SYSTEM MESSAGE ROUTINE
GVTICMD
BLDCMD

CALLED DIRECTLY BY:
-----------------
INSCR - INPUT SCREEN
FORM PROCESSOR Module Documentation

NAME:           OISCR/FVTBUF
PURPOSE:        FILL VTI BUFFER
LANGUAGE:       C
MODULE TYPE:    FUNCTION
FUNCTION TYPE:  CHAR * ()
SOURCE FILE:    OISCR
SOURCE FILE TYPE: C
HOST:           
SUBSYSTEM:      UI
SUBDIRECTORY:   FP
DOCUMENTATION GROUP: FORMPROC

DESCRIPTION:

SYNOPSIS

STATIC CHAR *FVTBUF(INPFLG)
  BOOL INPFLG:

INPUTS:
  INPFLG - INPUT FLAG (TRUE IF INPUT IS TO BE ENABLED)

OUTPUTS:
  RETURNS A RETURN CODE

DESCRIPTION
  BUILDS A VTI DATA STREAM FROM THE DISPLAY LIST.

ARGUMENTS:

INPFLG = BOOL

INCLUDE FILES:

STDTYP       - STANDARD TYPE DEFINITIONS
STDIO        - **** PURPOSE NOT FOUND BY STRIPPER ****
CTYPE        - **** PURPOSE NOT FOUND BY STRIPPER ****
TIME         - **** PURPOSE NOT FOUND BY STRIPPER ****
FPD          - FORM PROCESSOR DATA
FPCODE       - FORM PROCESSOR RETURN CODES
FPPARM       - FORM PROCESSOR PARAMETERS
VTICOM       - VTI COMMUNICATION DEFINITIONS
FUNCTS       - FUNCTION DEFINITIONS

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CTLCHR - CONTROL CHARACTERS

ROUTINES CALLED:

DSPMSG
PDVOTP - PUT DEVICE OUTPUT
OISCR/PROCWIN - PROCESS WINDOW
OISCR/PROCFLD - PROCESS FIELD
STRLEN
OISCR/ADDCMD - ADD COMMAND TO BUFFER
SPRINTF
OISCR/DSPSCR - DISPLAY SCREEN

CALLED DIRECTLY BY:

OUTSCR - OUTPUT SCREEN
ONWISC - OUTPUT (NO WAIT) / INPUT SCREEN
INSCR - INPUT SCREEN

USED IN MAIN PROGRAM(S):

MONITR/MAI - MAIN MODULE FOR MONITOR/UIS/FP PROCESS
NAME: OISCR/GATINF
PURPOSE: GET ATTRIBUTE INFO
LANGUAGE: C
MODULE TYPE: SUBROUTINE
FUNCTION TYPE: VOID ()
SOURCE FILE: OISCR
SOURCE FILE TYPE: .C
HOST:
SUBSYSTEM: UI
SUBDIRECTORY: FP
DOCUMENTATION GROUP: FORMPROC

DESCRIPTION:

SYNOPSIS
VOID GATINF(DP, ATP)
FIELD *DP;
ATTDEF *ATP:

INPUTS:
DP - FIELD TO GET ATTRIBUTE INFORMATION FOR

OUTPUTS:
ATP - POINTER TO ATTRIBUTES

DESCRIPTION
RETURNS THE CURRENT ATTRIBUTES OF THE SPECIFIED FIELD,
TAKING TEMPORARY ATTRIBUTES INTO ACCOUNT.

ARGUMENTS:

DP - FIELD *
ATP - ATTDEF *

INCLUDE FILES:

STDTYP - STANDARD TYPE DEFINITIONS
STDIO - **** PURPOSE NOT FOUND BY STRIPPER ****
CTYPE - **** PURPOSE NOT FOUND BY STRIPPER ****
TIME - **** PURPOSE NOT FOUND BY STRIPPER ****
FPD - FORM PROCESSOR DATA

3-194
FPCODE - FORM PROCESSOR RETURN CODES
FPPARM - FORM PROCESSOR PARAMETERS
VTICOM - VTI COMMUNICATION DEFINITIONS
FUNCTS - FUNCTION DEFINITIONS
CTLCHR - CONTROL CHARACTERS

ROUTINES CALLED:
---------------------
MABSAT - MAP ABSOLUTE ATTRIBUTE
STRASN

CALLED DIRECTLY BY:
---------------------
OISCR/PROCFLD - PROCESS FIELD

USED IN MAIN PROGRAM(S):
------------------------
MONITR/MAI - MAIN MODULE FOR MONITOR/UIS/FP PROCESS
FORM PROCESSOR Module Documentation

NAME: OISCR/PROCFLD
PURPOSE: PROCESS FIELD
LANGUAGE: C
MODULE TYPE: SUBROUTINE
FUNCTION TYPE: VOID ()
SOURCE FILE: OISCR
SOURCE FILE TYPE: .C
HOST:
SUBSYSTEM: UI
SUBDIRECTORY: FP
DOCUMENTATION GROUP: FORMPROC

DESCRIPTION:

SYNOPSIS

STATIC VOID PROCFLD(DP, CNGALL, DROW, DCOL)
FIELD *DP;
BOOL CNGALL;
INT DROW, DCOL;

INPUTS:

DP - FIELD TO PROCESS
CNGALL - GLOBAL CHANGE FLAG
DROW - OFFSET TO BE ADDED TO FIELD ROW
DCOL - OFFSET TO BE ADDED TO FIELD COLUMN

DESCRIPTION

DO DEFINE FIELD OR DEFINE WINDOW FOR CURRENT FIELD AND
COMPUTE DEFAULT CURSOR POSITION.

ARGUMENTS

----------

DP = FIELD
CNGALL = BOOL
DROW = INT
DCOL = INT

INCLUDE FILES:

----------

STDTYP - STANDARD TYPE DEFINITIONS
STDIO  **** PURPOSE NOT FOUND BY STRIPPER ****

3 196
CTYPE - **** PURPOSE NOT FOUND BY STRIPPER ****
TIME - **** PURPOSE NOT FOUND BY STRIPPER ****
FPD - FORM PROCESSOR DATA
FP CODE - FORM PROCESSOR RETURN CODES
FPPARM - FORM PROCESSOR PARAMETERS
VTICOM - VTI COMMUNICATION DEFINITIONS
FUNCTS - FUNCTION DEFINITIONS
CTLCHR - CONTROL CHARACTERS

ROUTINES CALLED:

POSCUR - POSITION CURSOR
CBPTR
BLEN
STRCAT
OISCR/PROCFLD - PROCESS FIELD
ABS
MIN
OISCR/ADDCMD - ADD COMMAND TO BUFFER
SYSMSG - SYSTEM MESSAGE ROUTINE
PDVOTP - PUT DEVICE OUTPUT
STRLEN
SPRINTF
OISCR/GATINF - GET ATTRIBUTE INFO

CALLED DIRECTLY BY:

OISCR/FVTBUF - FILL VTI BUFFER
OISCR/PROCFLD - PROCESS FIELD
OISCR/PROCWIN - PROCESS WINDOW

USED IN MAIN PROGRAM(S):

MONITR/MAI - MAIN MODULE FOR MONITOR/UIS/FP PROCESS
FORM PROCESSOR Module Documentation

NAME: OISCR/PROCWIN
PURPOSE: PROCESS WINDOW
LANGUAGE: C
MODULE TYPE: SUBROUTINE
FUNCTION TYPE: VOID ()
SOURCE FILE: OISCR
SOURCE FILE TYPE: .C
HOST:
SUBSYSTEM: UI
SUBDIRECTORY: FP
DOCUMENTATION GROUP: FORMPROC

DESCRIPTION:

SYNOPSIS

STATIC VOID PROCWIN(DP, CNGALL, DROW, DCOL)
FIELD *DP;
BOOL CNGALL;
INT DROW, DCOL;

INPUTS:
DP - FIELD TO PROCESS
CNGALL - GLOBAL CHANGE FLAG
DROW - OFFSET TO BE ADDED TO FIELD ROW
DCOL - OFFSET TO BE ADDED TO FIELD COLUMN

DESCRIPTION

DO SET WINDOW COMMAND FOR CURRENT WINDOW AND PROCESS CONTAINED FIELDS.

ARGUMENTS:

DP = FIELD *
CNGALL = BOOL
DROW = INT
DCOL = INT

INCLUDE FILES:

STDTYPE - STANDARD TYPE DEFINITIONS
STDIO - **** PURPOSE NOT FOUND BY STRIPPER ****
CTYPE - **** PURPOSE NOT FOUND BY STRIPPER ****
TIME - **** PURPOSE NOT FOUND BY STRIPPER ****
FPD - FORM PROCESSOR DATA
FPCODE - FORM PROCESSOR RETURN CODES
FPARM - FORM PROCESSOR PARAMETERS
VTICOM - VTI COMMUNICATION DEFINITIONS
FUNCTS - FUNCTION DEFINITIONS
CTLCHR - CONTROL CHARACTERS

ROUTINES CALLED:
---------------------
OISCR/PROCFLD - PROCESS FIELD
STLEN
OISCR/ADDCMD - ADD COMMAND TO BUFFER
SPRINTF
OISCR/PROCWIN - PROCESS WINDOW
ABS

CALLED DIRECTLY BY:
---------------------
OISCR/FVTBUF - FILL VTI BUFFER
OISCR/PROCWIN - PROCESS WINDOW

USED IN MAIN PROGRAM(S):
----------------------
MONITR/MAI - MAIN MODULE FOR MONITOR/UIS/FP PROCESS
FORM PROCESSOR Module Documentation

NAME: OISCR/RSTINP
PURPOSE: RESET INPUT FLAGS
LANGUAGE: C
MODULE TYPE: SUBROUTINE
FUNCTION TYPE: VOID ()
SOURCE FILE: OISCR
SOURCE FILE TYPE: .C
HOST:
SUBSYSTEM: UI
SUBDIRECTORY: FP
DOCUMENTATION GROUP: FORMPROC

DESCRIPTION:

SYNOPSIS:

STATIC VOID RSTINP(DP)
FIELD *DP;

INPUTS:
DP - POINTER TO FIELD TO RESET INPUT FLAGS FOR

OUTPUTS:
NONE

DESCRIPTION:
RSTINP RESETS THE CHANGED ON INPUT FLAGS FOR A FIELD AND ITS CHILDREN

ARGUMENTS:

-----------
DP = FIELD '

INCLUDE FILES:

-------------
STDTYPE - STANDARD TYPE DEFINITIONS
STDIO - **** PURPOSE NOT FOUND BY STRIPPER ****
CTYPE - **** PURPOSE NOT FOUND BY STRIPPER ****
TIME - **** PURPOSE NOT FOUND BY STRIPPER ****
FPD - FORM PROCESSOR DATA
FFCODE - FORM PROCESSOR RETURN CODES
FPARM - FORM PROCESSOR PARAMETERS

3-200
VTICOM - VTI COMMUNICATION DEFINITIONS
FUNCTS - FUNCTION DEFINITIONS
CTLCHR - CONTROL CHARACTERS

ROUTINES CALLED:
-------------------
OISCR/RSTINP - RESET INPUT FLAGS
BLEN
PBPTR
CBPTR
MEMCPY

CALLED DIRECTLY BY:
-------------------
OISCR/RSTINP - RESET INPUT FLAGS
ONWISC - OUTPUT (NO WAIT) / INPUT SCREEN

USED IN MAIN PROGRAM(S):
---------------------
MONITR/MAI - MAIN MODULE FOR MONITOR/UIS/FP PROCESS
FORM PROCESSOR Module Documentation

NAME: OISCR/RSTMAT
PURPOSE: RESET TEMPORARY ATTRIBUTES
LANGUAGE: C
MODULE TYPE: SUBROUTINE
FUNCTION TYPE: VOID ()
SOURCE FILE: OISCR
SOURCE FILE TYPE: .C
HOST:
SUBSYSTEM: UI
SUBDIRECTORY: FP
DOCUMENTATION GROUP: FORMPROC

DESCRIPTION:

SYNOPSIS
STATIC VOID RSTMAT(DP)
FIELD *DP;

INPUTS:
DP - POINTER TO FIELD TO RESET TEMPORARY ATTRIBUTES FOR

DESCRIPTION
RSTMAT RESETS THE TEMPORARY ATTRIBUTE FOR A FIELD AND ITS CHILDREN

ARGUMENTS:

DP = FIELD *

INCLUDE FILES:

STDTYP - STANDARD TYPE DEFINITIONS
STDIO - **** PURPOSE NOT FOUND BY STRIPPER ****
CTYPE - **** PURPOSE NOT FOUND BY STRIPPER ****
TIME - **** PURPOSE NOT FOUND BY STRIPPER ****
FPD - FORM PROCESSOR DATA
FP CODE - FORM PROCESSOR RETURN CODES
FP ARM - FORM PROCESSOR PARAMETERS
VTICON - VTI COMMUNICATION DEFINITIONS
FUNCTS - FUNCTION DEFINITIONS
CTLCHR - CONTROL CHARACTERS

3-202
ROUTINES CALLED:

---

OISCR/RSTMAT - RESET TEMPORARY ATTRIBUTES

CALLED DIRECTLY BY:

---

OISCR/RSTMAT - RESET TEMPORARY ATTRIBUTES
INSCR - INPUT SCREEN
FORM PROCESSOR Module Documentation

NAME: OISCR/SETWIN
PURPOSE: SET WINDOW
LANGUAGE: C
MODULE TYPE: SUBROUTINE
FUNCTION TYPE: VOID
SOURCE FILE: OISCR
SOURCE FILE TYPE: .C
HOST:
SUBSYSTEM: UI
SUBDIRECTORY: FP
DOCUMENTATION GROUP: FORMPROC

DESCRIPTION:

SYNOPSIS

STATIC VOID SETWIN(DP, WP, ATT)
FIELD *DP, *WP;
ATTMAP *ATT;

INPUTS
DP - POINT TO TOP FIELD TO CHANGE ATTRIBUTE OF
WP - POINT TO LAST FIELD TO CHANGE ATTRIBUTE OF
ATT - ATTRIBUTE TO SET

DESCRIPTION
STARTING WITH THE SPECIFIED FIELD, SET IT AND ALL OF ITS
DECENDANTS' TEMPORARY ATTRIBUTES, STOPPING AT THE SPECIFIED LAST
FIELD.

ARGUMENTS:

DP = FIELD *
WP = FIELD *
ATT = ATTMAP *

INCLUDE FILES:

STDTYPE - STANDARD TYPE DEFINITIONS
STDMIO - **** PURPOSE NOT FOUND BY STRIPPER ****
CTYPE - **** PURPOSE NOT FOUND BY STRIPPER ****
TIME - **** PURPOSE NOT FOUND BY STRIPPER ****
FPD - FORM PROCESSOR DATA
FPCODE - FORM PROCESSOR RETURN CODES
FPPARM - FORM PROCESSOR PARAMETERS
VTICOM - VTI COMMUNICATION DEFINITIONS
FUNCTS - FUNCTION DEFINITIONS
CTLCHR - CONTROL CHARACTERS

ROUTINES CALLED:
---------------
OISCR/SETWIN - SET WINDOW

CALLED DIRECTLY BY:
---------------
OISCR/SETWIN - SET WINDOW
ONWISC - OUTPUT (NO WAIT) / INPUT SCREEN

USED IN MAIN PROGRAM(S):
---------------
MONITR/MAI - MAIN MODULE FOR MONITOR/UIS/FP PROCESS
FORM PROCESSOR Module Documentation

NAME: ONWISC
PURPOSE: OUTPUT (NO WAIT) / INPUT SCREEN
LANGUAGE: C
MODULE TYPE: FUNCTION
FUNCTION TYPE: BOOL()
SOURCE FILE: OISCR
SOURCE FILE TYPE: .C
HOST:
SUBSYSTEM: UT
SUBDIRECTORY: FP
DOCUMENTATION GROUP: FORMPROC

DESCRIPTION:

SYNOPSIS

BOOL ONWISC(PATH, CODEP)
    EPATH PATH;
    CHAR CODEP[];

INPUTS:
    PATH - WINDOW TO ACCEPT INPUT FROM

OUTPUTS:
    CODEP - RETURN CODE
    RETURNS ALSO SUCCESS = 0 / FAILURE = 1

DESCRIPTION

DISPLAYS THE FORMS ON THE DISPLAY LIST AND SETS INPUT
PENDING ON THE
SPECIFIED WINDOW.

ARGUMENTS:

--------

PATH = EPATH
CODEP = CHAR []

INCLUDE FILES:

--------

STD Typ - STANDARD TYPE DEFINITIONS
ST DIO - **** PURPOSE NOT FOUND BY STRIPPER ****
CTYPE - **** PURPOSE NOT FOUND BY STRIPPER ****
TIME - **** PURPOSE NOT FOUND BY STRIPPER ****

3-206
FPD - FORM PROCESSOR DATA
FPCODE - FORM PROCESSOR RETURN CODES
FPARM - FORM PROCESSOR PARAMETERS
VTicom - VTI COMMUNICATION DEFINITIONS
FUNCTS - FUNCTION DEFINITIONS
CTLCHR - CONTROL CHARACTERS

ROUTINES CALLED:

ESCPY - EXTERNAL STRING COPY
PTHPTR - GET PATH POINTER
OISCR/SETWIN - SET WINDOW
OISCR/RSTINP - RESET INPUT FLAGS
OISCR/FVTBUF - FILL VTI BUFFER
MEMCPY
SYSMSG - SYSTEM MESSAGE ROUTINE
GATDEF - GET ATTRIBUTE DEFINITION

CALLED DIRECTLY BY:

CALLFP - CALL FP ROUTINES
MONITR/MAI - MAIN MODULE FOR MONITOR/UIS/FP PROCESS
UIS - USR INTERFACE SERVICES

USED IN MAIN PROGRAM(S):

MONITR/MAI - MAIN MODULE FOR MONITOR/UIS/FP PROCESS
FORM PROCESSOR Module Documentation

NAME: OPMFRM
PURPOSE: OPEN FORM
LANGUAGE: C
MODULE TYPE: FUNCTION
FUNCTION TYPE: FORTRAN VOID ()
SOURCE FILE: OPMFRM
SOURCE FILE TYPE: .C
HOST:
SUBSYSTEM: UI
SUBDIRECTORY: FP
DOCUMENTATION GROUP: FORMPROC

DESCRIPTION:

SYNOPSIS
FORTRAN VOID OPMFRM(FRMNAM, CODEP)
ENAME FRMNAM;
CHAR CODEP[];

INPUTS:
FRMNAM - NAME OF FORM TO OPEN

OUTPUTS:
CODEP - RETURN CODE

DESCRIPTION
OPMFRM IS USED TO RETRIEVE A FORM FROM A LIBRARY. NORMAL SEARCH RULES ARE USED TO FIND THE FORM. THE FORM IS MADE ACTIVE AND THE DEFAULT FIELD DATA IS MADE AVAILABLE. IF THE FORM CONTAINS SUBFORMS THEY ARE ALSO OPENED. THE FORM IS NOT DISPLAYED AT THIS POINT.

ARGUMENTS
FRMNAM - ENAME
CODEP - CHAR []

INCLUDE FILES

3-208
STDTYP - STANDARD TYPE DEFINITIONS
STDI0 - **** PURPOSE NOT FOUND BY STRIPPER ****
CTYPE - **** PURPOSE NOT FOUND BY STRIPPER ****
FPD - FORM PROCESSOR DATA
FFFILE - FORM FILE FORMAT - VERSION 2
FPFREO - FORM PROCESSOR RETURN CODES

ROUTINES CALLED:

ESCPY - EXTERNAL STRING COPY
STRUPC
GOFPTR - GET OPEN FROM POINTER
SYSMSG - SYSTEM MESSAGE ROUTINE
OPNFRM/PFREC - PROCESS FORM RECORD
DELFLD - DELETE FIELD
FCLOSE
FMEMCPY
SPRINTF
FOPEN

CALLED DIRECTLY BY:

CALLFP - CALL FP ROUTINES
COPFRM - COPY FORM
OPNFRM/PFR - PROCESS FORM
UIS - USR INTERFACE SERVICES

USED IN MAIN PROGRAM(S):

MONITR/MAI - MAIN MODULE FOR MONITOR/UIS/FP PROCESS
FORM PROCESSOR Module Documentation

NAME
OPNFRM’BDBUFF
PURPOSE
BUILD DEFAULT BUFFER
LANGUAGE
C
MODULE TYPE
FUNCTION
FUNCTION TYPE
CHAR * ()
SOURCE FILE
OPNFRM
SOURCE FILE TYPE
C
HOST:
SUBSYSTEM: UI
SUBDIRECTORY: FP
DOCUMENTATION GROUP: FORMPROC

DESCRIPTION
------------------
BDBUFF GETS DEFAULT FIELD VALUES FROM THE FORM DESCRIPTION FILE AND USES THEM TO BUILD THE DEFAULT BUFFER.

ARGUMENTS
-----------
FILE = 'FILE'
FRP = 'FRMREC'
FP = 'FIELD'

INCLUDE FILES
---------------
STDTYP - STANDARD TYPE DEFINITIONS
STDIO - **** PURPOSE NOT FOUND BY STRIPPER ****
CTYPE - **** PURPOSE NOT FOUND BY STRIPPER ****
FPD - FORM PROCESSOR DATA
FFFV2 - FORM FILE FORMAT - VERSION 2
FP CODE - FORM PROCESSOR RETURN CODES

ROUTINES CALLED
----------------
FREE
OPNFRM BFLDDB - BUILD FIELD DEFAULT BUFFER
GETC
ISGNTRL
FEOF
FERROR

3-210
SYSMSG - SYSTEM MESSAGE ROUTINE
MALLOC

CALLED DIRECTLY BY:
OPNFRM PFREC - PROCESS FORM RECORD

USED IN MAIN PROGRAM(S):
MONITR MAI - MAIN MODULE FOR MONITOR/UIS/FP PROCESS
FORM PROCESSOR Module Documentation

NAME: OPNFRM/BFLDDB
PURPOSE: BUILD FIELD DEFAULT BUFFER
LANGUAGE: C
MODULE TYPE: FUNCTION
FUNCTION TYPE: CHAR * ( )
SOURCE FILE: OPNFRM
SOURCE FILE TYPE: .C
HOST:
SUBSYSTEM: UI
SUBDIRECTORY: FP
DOCUMENTATION GROUP: FORMPROC

DESCRIPTION:

BFLDDB BUILDS THE DEFAULT BUFFER FOR A FIELD. IT HAS TO
TO PROPAGATE THE VALUE IN THE DEFAULT BUFFER FOR EACH ITEM
OF AN ARRAY.

ARGUMENTS:

DP = FIELD *
TYPE = CHAR
TPP = CHAR **

INCLUDE FILES:

STDTYPE - STANDARD TYPE DEFINITIONS
STDOIO - **** PURPOSE NOT FOUND BY STRIPPER ****
CTYPE - **** PURPOSE NOT FOUND BY STRIPPER ****
FPD  - FORM PROCESSOR DATA
FFFV2  - FORM FILE FORMAT - VERSION 2
FP CODE - FORM PROCESSOR RETURN CODES

ROUTINES CALLED:

OPNFRM/BFLDDB - BUILD FIELD DEFAULT BUFFER
MEMCPY
BLLEN
SYSMSG - SYSTEM MESSAGE ROUTINE
MALLOC
CALLED DIRECTLY BY:

OPNFRM/BDBUFF - BUILD DEFAULT BUFFER
OPNFRM/BFLDDB - BUILD FIELD DEFAULT BUFFER

USED IN MAIN PROGRAM(S):

MONITR/MAI - MAIN MODULE FOR MONITOR/UIS/FP PROCESS
FORM PROCESSOR Module Documentation

NAME: OPNFRM/BRPNOD
PURPOSE: BUILD RELATIVE POSITION NODE
LANGUAGE: C
MODULE TYPE: FUNCTION
FUNCTION TYPE: CHAR *( )
SOURCE FILE: OPNFRM
SOURCE FILE TYPE: .C
HOST:
SUBSYSTEM: UI
SUBDIRECTORY: FP
DOCUMENTATION GROUP: FORMPROC

DESCRIPTION:

ARGUMENTS:

FILE = FILE *
DP = FIELD *

INCLUDE FILES:

STDTYP - STANDARD TYPE DEFINITIONS
STDIO - **** PURPOSE NOT FOUND BY STRIPPER ****
CTYPE - **** PURPOSE NOT FOUND BY STRIPPER ****
FPD - FORM PROCESSOR DATA
FFFV2 - FORM FILE FORMAT - VERSION 2
FPCODE - FORM PROCESSOR RETURN CODES

ROUTINES CALLED:

FERRO R
ABORT
FNDFLD - FIND FIELD
STRASN
SYMSMG - SYSTEM MESSAGE ROUTINE
MALLOC
FREAD
CALLED DIRECTLY BY:
------------------------
OPNFRM/PFREC - PROCESS FORM RECORD

USED IN MAIN PROGRAM(S):
----------------------
MONITR/MAI - MAIN MODULE FOR MONITOR/UIS/FP PROCESS
FORM PROCESSOR Module Documentation

NAME: OPNFRM/BTBUFF
PURPOSE: BUILD TEXT BUFFER
LANGUAGE: C
MODULE TYPE: FUNCTION
FUNCTION TYPE: CHAR * ()
SOURCE FILE: OPNFRM
SOURCE FILE TYPE: .C
HOST:
SUBSYSTEM: UI
SUBDIRECTORY: FP
DOCUMENTATION GROUP: FORMPROC

DESCRIPTION:
Description
BTBUFF GETS TEXT INFORMATION FROM THE FORM DESCRIPTION
FILE
AND USES IT TO BUILD THE TEXT BUFFER.

ARGUMENTS:

FILE = FILE *
FRP = FRMREC *
FP = FIELD *

INCLUDE FILES:

STDTYP - STANDARD TYPE DEFINITIONS
STDIO - **** PURPOSE NOT FOUND BY STRIPPER ****
CTYPE - **** PURPOSE NOT FOUND BY STRIPPER ****
FPD - FORM PROCESSOR DATA
FFFV2 - FORM FILE FORMAT - VERSION 2
FPCODE - FORM PROCESSOR RETURN CODES

ROUTINES CALLED:

FERROR
GETC
ISCNTRL
SYMSG - SYSTEM MESSAGE ROUTINE
MALLOC

3-216
CALLED DIRECTLY BY:

- OPNFRM/PFREC - PROCESS FORM RECORD

USED IN MAIN PROGRAM(S):

- MONITR/MAI - MAIN MODULE FOR MONITOR/UIS/FP PROCESS
FORM PROCESSOR Module Documentation

NAME: OPNFRM/PARY
PURPOSE: PROCESS ARRAY
LANGUAGE: C
MODULE TYPE: FUNCTION
FUNCTION TYPE: CHAR * ()
SOURCE FILE: OPNFRM
SOURCE FILE TYPE: .C
HOST:
SUBSYSTEM: UI
SUBDIRECTORY: FP
DOCUMENTATION GROUP: FORMPROC

DESCRIPTION:

DESCRIPTION
PARY LOADS THE ARRAY INFORMATION FOR A FIELD FROM THE FORM DESCRIPTION FILE INTO THE ARYTyp DATA STRUCTURE IN FD.H.

ARGUMENTS:

DRP = FLDREC *
NDP = FIELD **
PP = FIELD *
FLDNAM = NAME
ROW = INT
COL = INT
LEVEL = INT

INCLUDE FILES:

STDTyp - STANDARD TYPE DEFINITIONS
STDIo - **** PURPOSE NOT FOUND BY STRIPPER ****
CTYPE - **** PURPOSE NOT FOUND BY STRIPPER ****
FPD - FORM PROCESSOR DATA
FFFV2 - FORM FILE FORMAT - VERSION 2
FPCODE - FORM PROCESSOR RETURN CODES

ROUTINES CALLED:

OPNFRM/PARY - PROCESS ARRAY
ABS

3-218
MAX
MAKFLD    - MAKE FIELD
GATDEF    - GET ATTRIBUTE DEFINITION
SYSMSG    - SYSTEM MESSAGE ROUTINE
OPNFRM/PWIN - PROCESS WINDOW
OPNFRM/PFRM - PROCESS FORM
OPNFRM/PITM - PROCESS ITEM

CALLED DIRECTLY BY:

OPNFRM/PDREC - PROCESS FIELD RECORD
OPNFRM/PAR   - PROCESS ARRAY

USED IN MAIN PROGRAM(S):

MONITR/MAI   - MAIN MODULE FOR MONITOR/UIS/FP PROCESS
FORM PROCESSOR Module Documentation

NAME: OPNFRM/PDREC
PURPOSE: PROCESS FIELD RECORD
LANGUAGE: C
MODULE TYPE: FUNCTION
FUNCTION TYPE: CHAR *( )
SOURCE FILE: OPNFRM
SOURCE FILE TYPE: .C
HOST:
SUBSYSTEM: UI
SUBDIRECTORY: FP
DOCUMENTATION GROUP: FORMPROC

DESCRIPTION:
-----------------
DESCRIPTION
PDREC LOADS THE FIELD RECORDS FROM THE FORM DESCRIPTION
INTO THE FIELD DATA STRUCTURE.

ARGUMENTS:
-----------
FILE = FILE *
FRP = FRMREC *
FP = FIELD *

INCLUDE FILES:
-----------------
STDYP - STANDARD TYPE DEFINITIONS
STDIO - "***** PURPOSE NOT FOUND BY STRIPPER *****"
CTYPE - "***** PURPOSE NOT FOUND BY STRIPPER *****"
FPD - FORM PROCESSOR DATA
FFFV2 - FORM FILE FORMAT - VERSION 2
FPCODE - FORM PROCESSOR RETURN CODES

ROUTINES CALLED:
-----------------
OPNFRM/PARY - PROCESS ARRAY
ESCPY - EXTERNAL STRING COPY
SYSMSG - SYSTEM MESSAGE ROUTINE
FREAD

3-220
CALLED DIRECTLY BY:

OPWFRM/PFREC - PROCESS FORM RECORD

USED IN MAIN PROGRAM(S):

MONITR/MAI - MAIN MODULE FOR MONITOR/UIS/FP PROCESS
FORM PROCESSOR Module Documentation

NAME: OPNFRM/PFREC
PURPOSE: PROCESS FORM RECORD
LANGUAGE: C
MODULE TYPE: FUNCTION
FUNCTION TYPE: CHAR (*)
SOURCE FILE: OPNFRM
SOURCE FILE TYPE: .C
HOST:
SUBSYSTEM: UI
SUBDIRECTORY: FP
DOCUMENTATION GROUP: FORMPROC

DESCRIPTION:
PFREC LOADS THE FORM RECORDS FROM THE FORM DESCRIPTION FILE INTO THE FORM DATA STRUCTURE.

ARGUMENTS:
FILE = FILE *
DP = FIELD **
FNAME = NAME

INCLUDE FILES:
STDTYP - STANDARD TYPE DEFINITIONS
STDIO - **** PURPOSE NOT FOUND BY STRIPPER ****
CTYPE - **** PURPOSE NOT FOUND BY STRIPPER ****
FPD - FORM PROCESSOR DATA
FFFV2 - FORM FILE FORMAT - VERSION 2
FPCODE - FORM PROCESSOR RETURN CODES

ROUTINES CALLED:
OPNFRM/BRPNOD - BUILD RELATIVE POSITION NODE
OPNFRM/BDBUFF - BUILD DEFAULT BUFFER
OPNFRM/BTBUFF - BUILD TEXT BUFFER
OPNFRM/PDREC - PROCESS FIELD RECORD
OPNFRM/PTREC - PROCESS TEXT RECORD
MAKFLD - MAKE FIELD

3-222
GATDEF - GET ATTRIBUTE DEFINITION
STRCMP
ESCPY - EXTERNAL STRING COPY
SYSMSG - SYSTEM MESSAGE ROUTINE
FREAD

CALLED DIRECTLY BY:
-------------------------
OPNFRM - OPEN FORM

USED IN MAIN PROGRAM(S):
------------------------
MONITR/MAI - MAIN MODULE FOR MONITOR/UIS/FP PROCESS
FORM PROCESSOR Module Documentation

NAME             OPNFRM:PF RM
PURPOSE           PROCESS FORM
LANGUAGE          C
MODULE TYPE       FUNCTION
FUNCTION TYPE     CHAR ()
SOURCE FILE       OPNFRM
SOURCE FILE TYPE  .C
HOST              UI
SUBSYSTEM         UI
SUBDIRECTORY      FP
DOCUMENTATION GROUP: FORMPROC

DESCRIPTION

DESCRIPTION
THIS ROUTINE IS USED IN THE SITUATION WHERE WE ENCOUNTER
A FORM WITHIN A FORM. THE NEW FORM IS OPENED RECURSIVELY
AND THEN COPIED TO THE APPROPRIATE PLACE IN THE CONTAINING
FORM.

ARGUMENTS:

DRP = FLDREC '  
NDP = FIELD **
PP = FIELD '
FLDNAM = NAME
ROW = INT
COL = INT

INCLUDE FILES:

STDTYP - STANDARD TYPE DEFINITIONS
STDIO - **** PURPOSE NOT FOUND BY STRIPPER ****
CTYPE - **** PURPOSE NOT FOUND BY STRIPPER ****
FPD - FORM PROCESSOR DATA
FFFV2 - FORM FILE FORMAT - VERSION 2
FPCODE - FORM PROCESSOR RETURN CODES

ROUTINES CALLED

COPFLD - COPY FIELD
MAKFLD - MAKE FIELD
SYSMSG - SYSTEM MESSAGE ROUTINE
OPNFRM - OPEN FORM
GOFPTR - GET OPEN FROM POINTER

CALLED DIRECTLY BY:
---------------------
OPNFRM/PAR - PROCESS ARRAY

USED IN MAIN PROGRAM(S):
----------------------
MONITR/MAI - MAIN MODULE FOR MONITOR/UIS/FP PROCESS
FORM PROCESSOR Module Documentation

NAME:                     OPNFRM/PITM
PURPOSE:                  PROCESS ITEM
LANGUAGE:                 C
MODULE TYPE:              FUNCTION
FUNCTION TYPE:            CHAR * ()
SOURCE FILE:              OPNFRM
SOURCE FILE TYPE:         .C
HOST:                     
SUBSYSTEM:                UI
SUBDIRECTORY:             FP
DOCUMENTATION GROUP:      FORMPROC

DESCRIPTION:

DESCRIPTION
PITM PROCESSES ITEM INFORMATION FROM THE FORM DESCRIPTION
FILE PUTS IT INTO THE ITEM STRUCTURE IN FD.H.

ARGUMENTS:

DRP = FLDREC *
NDP = FIELD **
PP = FIELD *
FLDNAM = NAME
ROW = INT
COL = INT

INCLUDE FILES:

STDTYPE - STANDARD TYPE DEFINITIONS
STDIO - **** PURPOSE NOT FOUND BY STRIPPER ****
CTYPE - **** PURPOSE NOT FOUND BY STRIPPER ****
FPD - FORM PROCESSOR DATA
FFFV2 - FORM FILE FORMAT - VERSION 2
FPCODE - FORM PROCESSOR RETURN CODES

ROUTINES CALLED:

MEMCMP
MEMCPY
SYSMSG - SYSTEM MESSAGE ROUTINE

3-226
MALLOC
STRLEN
MAKFLD  - MAKE FIELD
GATDEF  - GET ATTRIBUTE DEFINITION
ESCPY   - EXTERNAL STRING COPY

CALLED DIRECTLY BY:
---------------------
OPNFRM/PAR - PROCESS ARRAY

USED IN MAIN PROGRAM(S):
-----------------------
MONITR/MAI - MAIN MODULE FOR MONITOR/UIS/FP PROCESS
FORM PROCESSOR Module Documentation

NAME: OPNFRM/PTREC
PURPOSE: PROCESS TEXT RECORD
LANGUAGE: C
MODULE TYPE: FUNCTION
FUNCTION TYPE: CHAR (*)
SOURCE FILE: OPNFRM
SOURCE FILE TYPE: .C
HOST:
SUBSYSTEM: UI
SUBDIRECTORY: FP
DOCUMENTATION GROUP: FORMPROC

DESCRIPTION:

DESCRIPTION
PTREC LOADS THE TEXT RECORDS FROM THE FORM DESCRIPTION FILE INTO THE TEXT DATA STRUCTURE.

ARGUMENTS:

FILE = FILE *
FRP = FRMREC *
FP = FIELD *

INCLUDE FILES:

STDTYP - STANDARD TYPE DEFINITIONS
STDIO - **** PURPOSE NOT FOUND BY STRIPPER ****
CTYPE - **** PURPOSE NOT FOUND BY STRIPPER ****
FPD - FORM PROCESSOR DATA
FFFV2 - FORM FILE FORMAT - VERSION 2
FPCODE - FORM PROCESSOR RETURN CODES

ROUTINES CALLED:

MALLOC
SYMSMG - SYSTEM MESSAGE ROUTINE
FREAD
PS 620144200
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CALLED DIRECTLY BY:

OPNFRM/PFREC - PROCESS FORM RECORD

USED IN MAIN PROGRAM(S):

MONITR/MAI - MAIN MODULE FOR MONITOR/UIS/FP PROCESS
FORM PROCESSOR Module Documentation

NAME:          OPNFRM/PWIN
PURPOSE:       PROCESS WINDOW
LANGUAGE:      C
MODULE TYPE:   FUNCTION
FUNCTION TYPE: CHAR * ()
SOURCE FILE:  OPNFRM
SOURCE FILE TYPE: .C
HOST:          
SUBSYSTEM:     UI
SUBDIRECTORY:  FP
DOCUMENTATION GROUP: FORMPROC

DESCRIPTION:
-----------------------------------------------------

DESCRIPTION
PWIN GETS WINDOW INFORMATION FROM THE FORM DESCRIPTION FILE
AND INSERTS IT INTO THE WINTYP DATA STRUCTURE IN FD.H.

ARGUMENTS:
-----------

DRP = FLDREC *
NDP = FIELD **
PP = FIELD *
FLDNAM = NAME
ROW = INT
COL = INT

INCLUDE FILES:
----------------

STDDTP - STANDARD TYPE DEFINITIONS
STDIO - **** PURPOSE NOT FOUND BY STRIPPER ****
CTYPE - **** PURPOSE NOT FOUND BY STRIPPER ****
FPD - FORM PROCESSOR DATA
FFFV2 - FORM FILE FORMAT - VERSION 2
FP CODE - FORM PROCESSOR RETURN CODES

ROUTINES CALLED:
-----------------

STRASN
MAKFLD - MAKE FIELD
GATDEF - GET ATTRIBUTE DEFINITION

3-230
ESCPY - EXTERNAL STRING COPY

CALLED DIRECTLY BY:

------------------------
OPNFRM/PAR - PROCESS ARRAY

USED IN MAIN PROGRAM(S):

------------------------
MONITR/MAI - MAIN MODULE FOR MONITOR/UIS/FP PROCESS
FORM PROCESSOR Module Documentation

NAME: OPNLVDV
PURPOSE: OPEN LOGICAL DEVICE
LANGUAGE: C
MODULE TYPE: FUNCTION
FUNCTION TYPE: FORTRAN VOID ()
SOURCE FILE: OPNLVDV
SOURCE FILE TYPE: .C
HOST:
SUBSYSTEM: UI
SUBDIRECTORY: FP
DOCUMENTATION GROUP: FORMPROC

DESCRIPTION:

SYNOPSIS

FORTRAN VOID OPNLVDV(LDWNID,RCODE)
INT *LDWNID;
CHAR RCODE[];

INPUTS/OUTPUTS:

INPUTS:
ADDRESS OF:
LOGICAL DEVICES TOP WINDOW ID
RETURN CODE

OUTPUTS:
LDWNID - LOGICAL DEVICES TOP WINDOW ID
RCODE - RETURN CODE

DESCRIPTION

THIS MODULE OPENS A LOGICAL DEVICE. IF IT FAILS IT
RETURNS NFPDSTRC ERROR.

ARGUMENTS:

LDWNID = INT *
RCODE = CHAR []

3-232
INCLUDE FILES:

STDTYP - STANDARD TPE DEFINITIONS
FPD - FORM PROCESSOR DATA
FPCODE - FORM PROCESSOR RETURN CODES

ROUTINES CALLED:

STUPFP - SET UP FORM PROCESSOR DATA STRUCTURES
MAKFPD - MAKE FORM PROCESSOR DATA (LOGICAL DEVICE STRUCTURE)
MEMCPY

CALLED DIRECTLY BY:

CALLFP - CALL FP ROUTINES

USED IN MAIN PROGRAM(S):

MONITR/MAI - MAIN MODULE FOR MONITOR/UIS/FP PROCESS
NAME: OUTSCR
PURPOSE: OUTPUT SCREEN
LANGUAGE: C
MODULE TYPE: FUNCTION
FUNCTION TYPE: FORTRAN VOID ()
SOURCE FILE: OISCR
SOURCE FILE TYPE: .C
HOST:
SUBSYSTEM: UI
SUBDIRECTORY: FP
DOCUMENTATION GROUP: FORMPROC

DESCRIPTION:

SYNOPSIS
FORTRAN VOID OUTSCR(PATH, CODEP)
   EPATH PATH;
   CHAR CODEP[];

INPUTS:
   PATH - INPUT WINDOW PATH NAME - NOT USED

OUTPUTS:
   CODEP - RETURN CODE

DESCRIPTION
DISPLAY ALL FORMS ON THE DISPLAY LIST.

ARGUMENTS:

PATH = EPATH
CODEP = CHAR []

INCLUDE FILES:

- STDTYPE - STANDARD TYPE DEFINITIONS
- STDIO - ***** PURPOSE NOT FOUND BY STRIPPER *****
- CTYPE - ***** PURPOSE NOT FOUND BY STRIPPER *****
- TIME - ***** PURPOSE NOT FOUND BY STRIPPER *****
- FPD - FORM PROCESSOR DATA
- FPCODE - FORM PROCESSOR RETURN CODES
- FPPARM - FORM PROCESSOR PARAMETERS

3-234
VTICOM - VTI COMMUNICATION DEFINITIONS
FUNCTS - FUNCTION DEFINITIONS
CTLCHR - CONTROL CHARACTERS

ROUTINES CALLED:
-------------------
MEMCPY
OISCR/FVTBUF - FILL VTI BUFFER

CALLED DIRECTLY BY:
-------------------
CALLFPP - CALL FP ROUTINES
MONITR/MAI - MAIN MODULE FOR MONITOR/UIS/FP PROCESS
UIS - USR INTERFACE SERVICES

USED IN MAIN PROGRAM(S):
-------------------
MONITR/MAI - MAIN MODULE FOR MONITOR/UIS/FP PROCESS
FORM PROCESSOR Module Documentation

NAME: PARFQN
PURPOSE: PARSE FULLY QUALIFIED NAME
LANGUAGE: C
MODULE TYPE: SUBROUTINE
FUNCTION TYPE: VOID ()
SOURCE FILE: PARFQN
SOURCE FILE TYPE: .C
HOST: UI
SUBSYSTEM: UI
SUBDIRECTORY: FP
DOCUMENTATION GROUP: FORMPROC

DESCRIPTION:

SYNOPSIS

FORTRAN VOID PARFQN(FQN, LSTFTP, LEVEL, PARNAM, PARTYP, RCODE)

EPATH FQN;
CHAR *LSTFTP;
SHORT *LEVEL;
EPATH PARNAM;
CHAR *PARTYP;
CHAR *RCODE;

INPUTS:
FQN = FULLY QUALIFIED NAME TO BE PARSED.
LSTFTP = TYPE OF THE LAST FIELD IN FULLY QUALIFIED NAME
LEVEL = LEVEL OF FIELD INTERESTED IN OBTAINING
0 = LAST LEVEL OF FULLY QUALIFIED NAME
-1 = FIRST FROM LAST LEVEL OF FULLY QUALIFIED NAME
-2 = SECOND FROM LAST LEVEL OF FULLY QUALIFIED NAME
ETC. . .
1 = FIRST LEVEL OF FULLY QUALIFIED NAME
2 = SECOND LEVEL OF FULLY QUALIFIED NAME
ETC. . .

OUTPUTS:

PARNAM = PARSED NAME
PARTYP = TYPE OF THE FIELD WITH PARSED NAME
RCODE = RETURN CODE

3-236
DESCRIPTION

PARFQN WILL RETURN THE NAME OF THE FIELD AND ITS TYPE AT A SPECIFIED LEVEL OF A SPECIFIED FULLY QUALIFIED NAME GIVEN THE TYPE OF THE LAST FIELD OF THIS FULLY QUALIFIED NAME.

ARGUMENTS:

---
FQN = EPATH
LSTFTP = CHAR *
LEVEL = SHORT *
PARNAM = EPATH
PARTYP = CHAR *
RCODE = CHAR *

INCLUDE FILES:

---
STDTYP - STANDARD TYPE DEFINITIONS
FPCODE - FORM PROCESSOR RETURN CODES
FPD - FORM PROCESSOR DATA

ROUTINES CALLED:

---
ESCPY - EXTERNAL STRING COPY
STRCHR
MEMCPY
STRENA
MEMSET
SYSMSG - SYSTEM MESSAGE ROUTINE
STRRCHR

CALLED DIRECTLY BY:

---
CALLFP - CALL FP ROUTINES

USED IN MAIN PROGRAM(S):

---
MONITR/MAI - MAIN MODULE FOR MONITOR/UIS/FP PROCESS
FORM PROCESSOR Module Documentation

NAME: PDATA
PURPOSE: PUT FORM DATA
LANGUAGE: C
MODULE TYPE: FUNCTION
FUNCTION TYPE: FORTRAN VOID (
SOURCE FILE: PDATA
SOURCE FILE TYPE: .C
HOST:
SUBSYSTEM: UI
SUBDIRECTORY: FP
DOCUMENTATION GROUP: FORMPROC

DESCRIPTION:

------

SYNOPSIS

FORTRAN VOID PDATA(EWPATH, FDATA, CODEP)
EPATH EWPATH;
CHAR *FDATA;
CHAR CODEP[];

INPUTS:
EWPATH - PATH NAME
FDATA - PATH DATA

OUTPUTS:
CODEP - RETURN CODE

DESCRIPTION
USE PDATA TO PUT DATA ON A FORM, FIELD, ARRAY OR WINDOW.

ARGUMENTS:

--------
EWPATH = EPATH
FDATA = CHAR *
CODEP = CHAR []

INCLUDE FILES:

--------
STDTYPE - STANDARD TYPE DEFINITIONS
CTYPE - ***** PURPOSE NOT FOUND BY STRIPPER *****
FPD - FORM PROCESSOR DATA
FPCODE - FORM PROCESSOR RETURN CODES

ROUTINES CALLED:

ESCPY - EXTERNAL STRING COPY
PTHPTR - GET PATH POINTER
PDATA/PUTBUF - PUT BUFFER
MEMCPY

CALLED DIRECTLY BY:

CALLFP - CALL FP ROUTINES
OISCR/DSPSCR - DISPLAY SCREEN
UIS - USR INTERFACE SERVICES

USED IN MAIN PROGRAM(S):

MONITR/MAI - MAIN MODULE FOR MONITOR/UIS/FP PROCESS
FORM PROCESSOR Module Documentation

NAME: PDATA/PUTBUF
PURPOSE: PUT BUFFER
LANGUAGE: C
MODULE TYPE: FUNCTION
FUNCTION TYPE: CHAR * ()
SOURCE FILE: PDATA
SOURCE FILE TYPE: .C
HOST: 
SUBSYSTEM: UI
SUBDIRECTORY: FP
DOCUMENTATION GROUP: FORMPROC

DESCRIPTION:

DESCRIPTION
PUTBUF PUTS DATA IN THE BUFFER AND UPDATES THE BUFFER
POINTER.

ARGUMENTS:

-------------
DP = FIELD *

INCLUDE FILES:

-------------
STDTYP - STANDARD TYPE DEFINITIONS
CTYPE - **** PURPOSE NOT FOUND BY STRIPPER ****
FPD - FORM PROCESSOR DATA
FPCODE - FORM PROCESSOR RETURN CODES

ROUTINES CALLED:

-------------
PDATA/PUTBUF - PUT BUFFER
SYSMSG - SYSTEM MESSAGE ROUTINE
ISPRINT
MEMCPY
MEMCMP
BLEN
CBPTR

CALLED DIRECTLY BY:

3-240
PDATA/PUTBUF - PUT BUFFER
PDATA - PUT FORM DATA

USED IN MAIN PROGRAM(S):

MONITR/MAI - MAIN MODULE FOR MONITOR/UIS/FP PROCESS
NAME: PDVOTP
PURPOSE: PUT DEVICE OUTPUT
LANGUAGE: C
MODULE TYPE: SUBROUTINE
FUNCTION TYPE: VOID
SOURCE FILE: PDVOTP
SOURCE FILE TYPE: .C
HOST:
SUBSYSTEM: UI
SUBDIRECTORY: FP
DOCUMENTATION GROUP: FORMPROC

DESCRIPTION:

SYNOPSIS

VOID PDVOTP(PDPTR, BUFF, LEN)

PD *PDPTR;
CHAR *BUFF;
INT LEN;

INPUTS/OUTPUTS:

INPUTS:

PD *PDPTR = POINTER TO DEVICE SENDING BUFF TO
CHAR *BUFF = BUFFER SENDING TO VIRTUAL TERMINAL
INT LEN = LENGTH OF THIS BUFFER

OUTPUTS:

NONE

DESCRIPTION

PDVOTP SENDS MESSAGES TO LOW LEVEL DRIVERS.

ARGUMENTS:

---------

PDPTR = PD *
BUFF = CHAR *
LEN = INT

INCLUDE FILES:

3-242
STDTYP - STANDARD TYPE DEFINITIONS
FPD - FORM PROCESSOR DATA
VTICOM - VTI COMMUNICATION DEFINITIONS
NTM - NTM INTERFACE INCLUDE FILE
FP CODE - FORM PROCESSOR RETURN CODES

ROUTINES CALLED:

MEMSET
MEMCPY
STRLEN
WRITE
CLOSE
SYSMSG - SYSTEM MESSAGE ROUTINE
NSEND
MEMCMP

CALLED DIRECTLY BY:

GDVINP - GET DEVICE INPUT
MAKUSR - MAKE USER
OISCR/FVTBUF - FILL VTI BUFFER
OISCR/PROCFLD - PROCESS FIELD
OISCR/ADDCMD - ADD COMMAND TO BUFFER
RMVF PD - REMOVE FORM PROCESSOR DATA STRUCTURE
UIS/PRCINP - PROCESS INPUT
UIS - USR INTERFACE SERVICES

USED IN MAIN PROGRAM(S):

MONITR/MAI - MAIN MODULE FOR MONITOR/UIS/FP PROCESS
FORM PROCESSOR Module Documentation

NAME: PMSGLC
PURPOSE: PUT MESSAGE LINE CODE
LANGUAGE: C
MODULE TYPE: FUNCTION
FUNCTION TYPE: FORTRAN VOID ()
SOURCE FILE: PMSGLC
SOURCE FILE TYPE: .C
HOST:
SUBSYSTEM: UI
SUBDIRECTORY: FP
DOCUMENTATION GROUP: FORMPROC

DESCRIPTION:

SYNOPSIS
FORTRAN VOID PMSGLC(CODEP)
CHAR CODEP[];

INPUTS:
CODEP - RETURN CODE TO DISPLAY MESSAGE FOR

DESCRIPTION
PMSGLC MATCHES A PREDETERMINED MESSAGE WITH RCODE. IT THEN
INSERTS THE MESSAGE INTO THE MESSAGE-LINE PORTION OF THE
BUFFER SO THAT THE MESSAGE WILL BE DISPLAYED THE NEXT TIME
A SCREEN IS SENT TO THE TERMINAL. FOLLOW THIS CALL WITH A
CALL TO OUTSCR OR OISCR FOR IMMEDIATE TRANSMISSION.

ARGUMENTS:
---------
CODEP = CHAR []

INCLUDE FILES:
-----------------
STDTYP - STANDARD TYPE DEFINITIONS
FPD - FORM PROCESSOR DATA

ROUTINES CALLED:
-----------------
FNDMSG - FIND MESSAGE

3-244
PMSGLS  -  PUT MESSAGE LINE STRING

CALLED DIRECTLY BY:

-------------------------
CALLFP  -  CALL FP ROUTINES
MONITR/MAI - MAIN MODULE FOR MONITOR/UIS/FP PROCESS
INSCR    -  INPUT SCREEN
SYSMSG   -  SYSTEM MESSAGE ROUTINE
UIS/STRTAP - START APPLICATION
UIS       -  USR INTERFACE SERVICES

USED IN MAIN PROGRAM(S):

-------------------------
MONITR/MAI - MAIN MODULE FOR MONITOR/UIS/FP PROCESS
FORM PROCESSOR Module Documentation

NAME: PMSGLS
PURPOSE: PUT MESSAGE LINE STRING
LANGUAGE: C
MODULE TYPE: FUNCTION
FUNCTION TYPE: FORTRAN VOID ()
SOURCE FILE: PMSGLS
SOURCE FILE TYPE: .C
HOST:
SUBSYSTEM: UI
SUBDIRECTORY: FP
DOCUMENTATION GROUP: FORMPROC

DESCRIPTION:

SYNOPSIS
FORTRAN VOID PMSGLS(MSGSTR)
EMSG MSGSTR;

INPUTS:
MSGSTR - MESSAGE TO DISPLAY

DESCRIPTION
PMSGLS INSERTS MSG-STRING INTO THE MESSAGE-LINE PORTION
OF THE BUFFER. THE MESSAGE-LINE WILL BE DISPLAYED THE
NEXT TIME A SCREEN IS SENT TO THE TERMINAL. FOLLOW THIS
CALL WITH A CALL TO OUTSCR OR OISCR FOR IMMEDIATE
TRANSMISSION.

ARGUMENTS:

MSGSTR = EMSG

INCLUDE FILES:

STDTRYP - STANDARD TYPE DEFINITIONS
FPD - FORM PROCESSOR DATA
FPCODE - FORM PROCESSOR RETURN CODES
CTYPE - ***** PURPOSE NOT FOUND BY STRIPPER *****

ROUTINES CALLED:

3-246
PS 620144200
1 November 1985

---

MALLOC
FUISWN - FIND UIS WINDOW
ESCPY - EXTERNAL STRING COPY
STRLEN
MEMSET
ISPRINT

CALLED DIRECTLY BY:

---

CALLFP - CALL FP ROUTINES
PMSGLC - PUT MESSAGE LINE CODE
RMVAP - REMOVE APPLICATION
UIS/STRTAP - START APPLICATION
UIS/STRTPD - START PHYSICAL DEVICE
UIS/PRCWND - PROCESS WINDOW
UIS - USR INTERFACE SERVICES

USED IN MAIN PROGRAM(S):

---

MONITR/MAI - MAIN MODULE FOR MONITOR/UIS/FP PROCESS
NAME: POSCUR
PURPOSE: POSITION CURSOR
LANGUAGE: C
MODULE TYPE: SUBROUTINE
FUNCTION TYPE: VOID ()
SOURCE FILE: POSCUR
SOURCE FILE TYPE: .C
HOST: SUBSYSTEM UI
SUBDIRECTORY: FP
DOCUMENTATION GROUP: FORMPROC

DESCRIPTION:

SYNOPSIS
VOID POSCUR(DP, RELPOS, ABSPOS)
REGISTER FIELD *DP;
POSITION *RELPOS;
POSITION *ABSPOS;

INPUTS OUTPUTS:

INPUTS:
DP - FIELD WHOSE ROW AND COL WANT TO ABSOLUTIZED
STRUCTURE CONTAINING:
RELATIVE ROW OF FIELD
RELATIVE COL OF FIELD

OUTPUTS:
POSITION OF CURSOR

DESCRIPTION
THIS MODUL CALUCULATES ABSOLUTE CURSOR FOR INSERTING INTO
OUTCUR. GOING
UP CHILD PARENT TREE AND ADDING EACH SUCCESSIVE PARENT’S
ROW AND COL
TO SUM OF CHILD’S, CLIPPING POSITION TO BOUNDS OF PARENT
WINDOW.

ARGUMENTS:

3-248
DP = FIELD
RELPOS = POSITION
ABSPOS = POSITION

INCLUDE FILES:
-----------------
STDTYP - STANDARD TYPE DEFINITIONS
FPD - FORM PROCESSOR DATA

ROUTINES CALLED:
-----------------
POSCUR/FNFITM - FIND FIRST ITEM OF FIELD
MAX
MIN

CALLED DIRECTLY BY:
-----------------
OISCR/PROCFLD - PROCESS FIELD
PUTCUR - PUT CURSOR
PUTLOC - PUT LOCATION
RMVFPD - REMOVE FORM PROCESSOR DATA STRUCTURE

USED IN MAIN PROGRAM(S):
-----------------
MONITR/MAI - MAIN MODULE FOR MONITOR/UIS/FP PROCESS
I FORM PROCESSOR Module Documentation

NAME: POSCUR/FNFITM
PURPOSE: FIND FIRST ITEM OF FIELD
LANGUAGE: C
MODULE TYPE: FUNCTION
FUNCTION TYPE: FIELD * ()
SOURCE FILE: POSCUR
SOURCE FILE TYPE: .C
HOST: -
SUBSYSTEM: UI
SUBDIRECTORY: FP
DOCUMENTATION GROUP: FORMPROC

DESCRIPTION:

SYNOPSIS

STATIC FIELD * FNFITM(DP)
REGISTER FIELD *DP:

INPUTS/OUTPUTS:

INPUTS:

DP - FIELD WHOSE A POITER TO WHOSE FIRST ITEM IS DESIRED
OUTPUTS:

POINTER TO FIRST INPUT ITEM OF FIELDS CHILDREN IF ANY
OTHERWISE A NULL

DESCRIPTION

THIS MODUL FINDS THE THE FIEST ITEM OF A FIELD IF ANY

ARGUMENTS:

--------------

DP = FIELD *

INCLUDE FILES

-------------

STDTYP - STANDARD TYPE DEFINITIONS
FPD - FORM PROCESSOR DATA

ROUTINES CALLED:

3-250
POSCUR/FNFITM - FIND FIRST ITEM OF FIELD

CALLED DIRECTLY BY:

POSCUR - POSITION CURSOR
POSCUR/FNFITM - FIND FIRST ITEM OF FIELD

USED IN MAIN PROGRAM(S):

MONITR/MAI - MAIN MODULE FOR MONITOR/UIS/FP PROCESS
FORM PROCESSOR Module Documentation

NAME: PRNAP
PURPOSE: PRINT APPLICATION
LANGUAGE: C
MODULE TYPE: SUBROUTINE
FUNCTION TYPE: VOID ()
SOURCE FILE: PRNFLD
SOURCE FILE TYPE: .C
HOST: SUBSYSTEM: UI
SUBDIRECTORY: FP
DOCUMENTATION GROUP: FORMPROC

DESCRIPTION:

FOR DEBUGGING:
PRINTS INFO FROM AP STRUCTURE USING FPD POINTER

ARGUMENTS:

FPD = FPD

INCLUDE FILES:

STDTYP - STANDARD TYPE DEFINITIONS
FPD - FORM PROCESSOR DATA
STDIO - "*** PURPOSE NOT FOUND BY STRIPPER ***"

ROUTINES CALLED:

PRINTF

CALLED DIRECTLY BY:

PRNPD - PRINT PHYSICAL DEVICE
PRNUUSR - PRINT USER
PRNUID - PRINT UID

USED IN MAIN PROGRAM(S):

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<table>
<thead>
<tr>
<th>PRNUID</th>
<th>PRINT UID</th>
</tr>
</thead>
<tbody>
<tr>
<td>PRNUSR</td>
<td>PRINT USER</td>
</tr>
</tbody>
</table>
FORM PROCESSOR Module Documentation

NAME: PRNDSP
PURPOSE: PRINT DISPLAY LIST
LANGUAGE: C
MODULE TYPE: SUBROUTINE
FUNCTION TYPE: VOID ()
SOURCE FILE: PRNFLD
SOURCE FILE TYPE: .C
HOST: SUBSYSTEM: UI
SUBDIRECTORY: FP
DOCUMENTATION GROUP: FORMPROC

DESCRIPTION
FOR DEBUGGING:
PRINTS A DISPLAY LIST CALLS PRNFLD WITH DSPLST

INCLUDE FILES:
STDTYP - STANDARD TYPE DEFINITIONS
FPL - FORM PROCESSOR DATA
STDIO - """" PURPOSE NOT FOUND BY STRIPPER """

ROUTINES CALLED:
PRNFLD - PRINT FIELD
FORM PROCESSOR Module Documentation

NAME: PRNFLD
PURPOSE: PRINT FIELD
LANGUAGE: C
MODULE TYPE: SUBROUTINE
FUNCTION TYPE: VOID ()
SOURCE FILE: PRNFLD
SOURCE FILE TYPE: C
HOST: SUBSYSTEM: UI
SUBDIRECTORY: FP
DOCUMENTATION GROUP: FORMPROC

DESCRIPTION:

SYNOPSIS
PRNFLD(DP,CHLDFLG)
FIELD *DP;
BOOL CHLDFLG:

INPUTS:
DP - POINTER TO FIRST FIELD TO PRINT
CHLDFLG - FLAG - WHETHER WANT TO LOOK AT CHILDREN OR NOT

DESCRIPTION
FOR DEBUGGING:
PRINTS A FIELD AND ITS CONTENTS FOLLOWED BY ITS NEXT FIELD. ETC.

ARGUMENTS:

---------------
DP = FIELD '
CHLDFLG = BOOL

INCLUDE FILES:

---------------
STDTYP - STANDARD TYPE DEFINITIONS
FPD - FORM PROCESSOR DATA
STDIO - **** PURPOSE NOT FOUND BY STRIPPER ****

ROUTINES CALLED:

3 255
PRNFLD   - PRINT FIELD
DOWIND
DOITEM
DOATTR
PRINTF

CALLED DIRECTLY BY:

PRNFLD   - PRINT FIELD
PRNDSP   - PRINT DISPLAY LIST
PRNOPN   - PRINT OPEN LIST

USED IN MAIN PROGRAM(S):

PRNDSP   - PRINT DISPLAY LIST
PRNOPN   - PRINT OPEN LIST
FORM PROCESSOR Module Documentation

NAME: PRNOPN
PURPOSE: PRINT OPEN LIST
LANGUAGE: C
MODULE TYPE: SUBROUTINE
FUNCTION TYPE: VOID()
SOURCE FILE: PRNFLD
SOURCE FILE TYPE: .C
HOST: SUBSYSTEM: UI
SUBDIRECTORY: FP
DOCUMENTATION GROUP: FORMPROC

DESCRIPTION:

DESCRIPTION FOR DEBUGGING:
PRINTS A OPEN LIST CALLS PRNFLD WITH OPNLST

INCLUDE FILES:

-------------
STDTYP - STANDARD TYPE DEFINITIONS
FPD - FORM PROCESSOR DATA
STDIO - **** PURPOSE NOT FOUND BY STRIPPER ****

ROUTINES CALLED:

-------------
PRNFLD - PRINT FIELD
FORM PROCESSOR Module Documentation

NAME: PRNPD
PURPOSE: PRINT PHYSICAL DEVICE
LANGUAGE: C
MODULE TYPE: SUBROUTINE
FUNCTION TYPE: VOID ()
SOURCE FILE: PRNFLD
SOURCE FILE TYPE: .C
HOST:
SUBSYSTEM: UI
SUBDIRECTORY: FP
DOCUMENTATION GROUP: FORMPROC

DESCRIPTION:

DESCRIPTION
FOR DEBUGGING:
PRINTS INFO FROM PD STRUCTURE USING PD POINTER

ARGUMENTS:

--------
PD = PD *

INCLUDE FILES:

-------------
STDTYP - STANDARD TYPE DEFINITIONS
FPD - FORM PROCESSOR DATA
STDIO - ***** PURPOSE NOT FOUND BY STRIPPER *****

ROUTINES CALLED:

-------------
PRNAP - PRINT APLICATION
PRINTF

CALLED DIRECTLY BY:

-------------
PRNUSR - PRINT USER
PRNUID - PRINT UID

USED IN MAIN PROGRAM(S):

3-258
PS 620144200
1 November 1985

PRNUID - PRINT UID
PRNUSR - PRINT USER
FORM PROCESSOR Module Documentation

NAME: PRNUID
PURPOSE: PRINT UID
LANGUAGE: C
MODULE TYPE: SUBROUTINE
FUNCTION TYPE: VOID()
SOURCE FILE: PRNFLD
SOURCE FILE TYPE: .C
HOST:
SUBSYSTEM: UI
SUBDIRECTORY: FP
DOCUMENTATION GROUP: FORMPROC

DESCRIPTION:

FOR DEBUGGING:
PRINTS UID INFO & CALLS PRNAP AND PRNPD FOR ALL AP AN PD
ON UIS AP
AND PD LIST

INCLUDE FILES:

STDTYP - STANDARD TYPE DEFINITIONS
FPD - FORM PROCESSOR DATA
STDIO - ***** PURPOSE NOT FOUND BY STRIPPER *****

ROUTINES CALLED:

PRINTF
PRNPD - PRINT PHYSICAL DEVICE
PRNAP - PRINT APLICATION
FORM PROCESSOR Module Documentation

NAME: PRNUSR
PURPOSE: PRINT USER
LANGUAGE: C
MODULE TYPE: SUBROUTINE
FUNCTION TYPE: VOID ()
SOURCE FILE: PRNFLD
SOURCE FILE TYPE: .C
HOST:
SUBSYSTEM: UI
SUBDIRECTORY: FP
DOCUMENTATION GROUP: FORMPROC

DESCRIPTION:

DESCRIPTION FOR DEBUGGING:
PRINTS USER INFO & CALLS PRNAP AND PRNPD FOR ALL AP AN
PD FOR ALL USERS

INCLUDE FILES:

STDTYP - STANDARD TYPE DEFINITIONS
FPD - FORM PROCESSOR DATA
STDIO - **** PURPOSE NOT FOUND BY STRIPPER ****

ROUTINES CALLED:

PRNPD - PRINT PHYSICAL DEVICE
PRNAP - PRINT APLICATION
PRINTF
FORM PROCESSOR Module Documentation

NAME: PTHPTR
PURPOSE: GET PATH POINTER
LANGUAGE: C
MODULE TYPE: FUNCTION
FUNCTION TYPE: CHAR (*())
SOURCE FILE: PTHPTR
SOURCE FILE TYPE: .C
HOST:
SUBSYSTEM: UI
SUBDIRECTORY: FP
DOCUMENTATION GROUP: FORMPROC

DESCRIPTION:

SYNOPSIS
CHAR *PTHPTR(PATH, PTHPP, TOPFLD)
PATH PATH;
FIELD **PTHPP;
FIELD *TOPFLD;

INPUTS:
PATH - PATH TO GET POINTER TO
TOPFLD - POINTER TO FIRST FIELD TO SEARCH FOR PATH

OUTPUTS:
PTHPTR - ADDRESS OF POINTER TO SET

DESCRIPTION
PARSES A QUALIFIED NAME PASSED AS A CHARACTER STRING IN PATH.
DETERMINES WHICH FIELD THIS NAME INDICATES AND RETURNS A POINTER
TO THAT FIELD IN THE DISPLAY LIST AS A PARAMETER.
PTHPTR RETURNS A NULL IF SUCCESSFUL ELSE RETURNS A POINTER TO AN ERROR CODE.

THE METHOD IS TO FORM A LIST OF ELEMENTS. ONE ELEMENT FOR EACH
QUALIFIER IN THE QUALIFIED NAME. THE FORM HIERARCHY IS SEARCHED
BY CHECKING IF A QUALIFIER MATCHES A FIELD NAME AT THE CURRENT
LEVEL AND A LOWER LEVEL. DEPENDING ON THE FIELD TYPE, PROCESSING WILL BE DONE FOR AN ARRAY, ITEM, FORM OR WINDOW. FIELD NAME MATCHING AND FIELD TYPE PROCESSING REPEATS UNTIL THE END OF THE ELEMENT LIST IS REACHED. AT THIS POINT PROCEDURE FOUND DETERMINES IF A FIELD HAS ACTUALLY BEEN LOCATED.

ARGUMENTS:

ARGUMENTS:

PATH = PATH
PTHPP = FIELD **
TOPFLD = FIELD *

INCLUDE FILES:

INCLUDE FILES:

STDTYPE - STANDARD TYPE DEFINITIONS
FPCODE - FORM PROCESSOR RETURN CODES
FPD - FORM PROCESSOR DATA
CTYPE - **** PURPOSE NOT FOUND BY STRIPPER ****

ROUTINES CALLED:

ROUTINES CALLED:

MALLOC
STRASN
ISDIGIT
SYMSMG - SYSTEM MESSAGE ROUTINE
PTHPTR/FIELD - MATCH FIELD
FREE
ISALNUM
TOUPPER

CALLED DIRECTLY BY:

CALLED DIRECTLY BY:

ADDELM - ADD ELEMENT
ADDFRM - ADD FORM TO WINDOW
GDATA - GET DATA
GDATA LN - GET DATA LENGTH
GETATT - GET ATTRIBUTE
GETBAK - GET BACKGROUND ATTRIBUTE
GPAGE - GET PAGE
GWINDO - GET WINDOW

3-263
ONWISC - OUTPUT (NO WAIT) / INPUT SCREEN
PDATA - PUT FORM DATA
PUTATT - PUT ATTRIBUTES
PUTBAK - PUT BACKGROUND ATTRIBUTES
PUTCUR - PUT CURSOR
PUTLOC - PUT LOCATION
RMVPAG - REMOVE PAGE
RPLFRM - REPLACE FORM
RSVEXP/BLDEXP - BUILD EXPRESSION TREE

USED IN MAIN PROGRAM(S):

MONITR/MAI - MAIN MODULE FOR MONITOR/UIS/FP PROCESS
FORM PROCESSOR Module Documentation

<table>
<thead>
<tr>
<th>NAME</th>
<th>PTHPTR/ARRAY</th>
</tr>
</thead>
<tbody>
<tr>
<td>PURPOSE:</td>
<td>PROCESS ARRAY</td>
</tr>
<tr>
<td>LANGUAGE:</td>
<td>C</td>
</tr>
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<td>FUNCTION</td>
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<td>.C</td>
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<td>UI</td>
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<td>SUBDIRECTORY:</td>
<td>FP</td>
</tr>
<tr>
<td>DOCUMENTATION GROUP:</td>
<td>FORMPROC</td>
</tr>
</tbody>
</table>

DESCRIPTION:
PROCESS ARRAYS. IF THE SUBELEMENT IS SPECIFIED THEN ONLY THAT ELEMENT IS SEARCHED, ELSE ALL SUBELEMENTS ARE SEARCHED.

ARGUMENTS:

| PATH =            | ELEMENT *             |
| PASS PATH =       | ELEMENT *             |
| FLDPTR =          | FIELD *               |
| LEVEL =           | INT                   |
| FIRST_LEVEL =     | INT                   |

INCLUDE FILES:

<table>
<thead>
<tr>
<th>STDTYPE</th>
<th>STANDARD TYPE DEFINITIONS</th>
</tr>
</thead>
<tbody>
<tr>
<td>FPCODE</td>
<td>FORM PROCESSOR RETURN CODES</td>
</tr>
<tr>
<td>FPD</td>
<td>FORM PROCESSOR DATA</td>
</tr>
<tr>
<td>CTYPE</td>
<td>**** PURPOSE NOT FOUND BY STRIPPER ****</td>
</tr>
</tbody>
</table>

ROUTINES CALLED:

<table>
<thead>
<tr>
<th>PTHPTR/FIELD</th>
<th>MATCH FIELD</th>
</tr>
</thead>
<tbody>
<tr>
<td>PTHPTR/FOUND</td>
<td>HAS ANYTHING BEEN FOUND?</td>
</tr>
</tbody>
</table>

CALLED DIRECTLY BY:

3-265
PTHPTR/FIELD - MATCH FIELD

USED IN MAIN PROGRAM(S):

MONITR/MAI - MAIN MODULE FOR MONITOR/UIS/FP PROCESS
FORM PROCESSOR Module Documentation

NAME: PTHPTR/FIELD
PURPOSE: MATCH FIELD
LANGUAGE: C
MODULE TYPE: FUNCTION
FUNCTION TYPE: INT ( )
SOURCE FILE: PTHPTR
SOURCE FILE TYPE: .C
HOST:
SUBSYSTEM: UI
SUBDIRECTORY: FP
DOCUMENTATION GROUP: FORMPROC

DESCRIPTION:

PROCESS FIELDS BY ATTEMPTING TO MATCH THE CURRENT NAME IN PATH WITH THE NAME IN FLDPTR. IN THIS AND THE FOLLOWING

PROCEDURES:

PATH - THE QUALIFIER TO USE AT THIS LEVEL
PASS_PATH - THE QUALIFIERS TO USE AT LOWER LEVELS
WHEN_PATH==NULL: END OF ELEMENT CHAIN
WHEN PATH==PASS_PATH: NO QUALIFIER IN THE CHAIN ELEMENT IS ASSOCIATED WITH THIS LEVEL

FLDPTR - POINTER TO FIELD IN THE HIERARCHY
LEVEL - THE LEVEL NUMBER OF THE FIELD INDICATED BY FLDPTR
FIRST.LEV - THE FIRST LEVEL AT WHICH A QUALIFIER IN THE ELEMENT CHAIN MATCHED A FIELD NAME

ARGUMENTS:

PATH = ELEMENT *
FLDPTR = FIELD *
LEVEL = INT
FIRST.LEV = INT

INCLUDE FILES:

STDTYP - STANDARD TYPE DEFINITIONS
FPCODE - FORM PROCESSOR RETURN CODES

3-267
FPD - FORM PROCESSOR DATA
CTYPE - **** PURPOSE NOT FOUND BY STRIPPER ****

ROUTINES CALLED:
-----------------
PTHPTR/ITEM - PROCESS ITEM
PTHPTR/WINDOW - PROCESS WINDOW
PTHPTR/FORM - PROCESS FORM
MIN
PTHPTR/ARRAY - PROCESS ARRAY
STRCMP

CALLED DIRECTLY BY:
---------------------
PTHPTR/ARRAY - PROCESS ARRAY
PTHPTR/FORM - PROCESS FORM
PTHPTR/WINDOW - PROCESS WINDOW
PTHPTR - GET PATH POINTER

USED IN MAIN PROGRAM(S):
-------------------------
MONITR/MAI - MAIN MODULE FOR MONITOR/UIS/FP PROCESS
FORM PROCESSOR Module Documentation

NAME: PTHPTR/FORM
PURPOSE: PROCESS FORM
LANGUAGE: C
MODULE TYPE: FUNCTION
FUNCTION TYPE: INT ()
SOURCE FILE: PTHPTR
SOURCE FILE TYPE: .C
HOST:
SUBSYSTEM: UI
SUBDIRECTORY: FP
DOCUMENTATION GROUP: FORMPROC

DESCRIPTION:

PROCESS FORMS. LOOK AT ALL SUB FIELDS OF A FORM.

ARGUMENTS:

PATH = ELEMENT *
PASS PATH = ELEMENT *
FLDPTR = FIELD *
LEVEL = INT
FIRST_LEV = INT

INCLUDE FILES:

STDTYP - STANDARD TYPE DEFINITIONS
FP CODE - FORM PROCESSOR RETURN CODES
FPD - FORM PROCESSOR DATA
CTYPE - **** PURPOSE NOT FOUND BY STRIPPER ****

ROUTINES CALLED:

PTHPTR/FIELD - MATCH FIELD
PTHPTR/FOUND - HAS ANYTHING BEEN FOUND?

CALLED DIRECTLY BY:

PTHPTR/FIELD - MATCH FIELD
USED IN MAIN PROGRAM(S):

MONITR MAI - MAIN MODULE FOR MONITOR/UIS/FP PROCESS
NAME: PTHPTR/FOUND
PURPOSE: HAS ANYTHING BEEN FOUND?
LANGUAGE: C
MODULE TYPE: FUNCTION
FUNCTION TYPE: INT()
SOURCE FILE: PTHPTR
SOURCE FILE TYPE: C
HOST: SUBSYSTEM:
SUBDIRECTORY: FP
DOCUMENTATION GROUP: FORMPROC

DESCRIPTION:

DETERMINE IF A FIELD HAS BEEN LOCATED. FOR A FIELD TO BE LOCATED THE PATH NAME MUST BE THE LAST NAME ON THE ELEMENT LIST AND MATCH THE FIELD'S NAME. ITS FIRST LEVEL MUST BE LESS THAN OR EQUAL TO ANY OTHERS CURRENTLY "FOUND", IF THE FIRST LEVELS ARE EQUAL THEN IT MUST HAVE A SHORTER LENGTH PATH.

********** WARNING **********
* DUE TO AN ANOMOLY IN WINDOWS A PATH NAME THAT ENDS *
* \..WINDOWS\; *
* WILL CAUSE PATH PTR TO BE SET IN PROCEDURE WINDOW *
* TO THE NTH FORM IN THE WINDOW INSTEAD OF HERE IN *
* PROCEDURE FOUND. IN ADDITION LEVEL IS INCREMENTED *
* IN PROCEDURE WINDOW BEFORE THE CALL TO FOUND. *

ARGUMENTS:

PATH = ELEMENT *
PASS_PATH = ELEMENT *
FLDPtr = FIELD *
LEVEL = INT
FIRST_LEV = INT

INCLUDE FILES:

STDTYP - STANDARD TYPE DEFINITIONS
FPCODE - FORM PROCESSOR RETURN CODES
FPD - FORM PROCESSOR DATA
CTYPE - **** PURPOSE NOT FOUND BY STRIPPER ****

ROUTINES CALLED:
-----------------
STRCMP

CALLED DIRECTLY BY:
---------------------
PTHPTR/ARRAY - PROCESS ARRAY
PTHPTR/FOR - PROCESS FORM
PTHPTR/ITE - PROCESS ITEM
PTHPTR/WINDOW - PROCESS WINDOW

USED IN MAIN PROGRAM(S):
-------------------------
MONITR/MAI - MAIN MODULE FOR MONITOR/UIS/FP PROCESS
FORM PROCESSOR Module Documentation

NAME: PTHPTR/ITEM
PURPOSE: PROCESS ITEM
LANGUAGE: C
MODULE TYPE: FUNCTION
FUNCTION TYPE: INT()
SOURCE FILE: PTHPTR
SOURCE FILE TYPE: .C
HOST:
SUBSYSTEM: UI
SUBDIRECTORY: FP
DOCUMENTATION GROUP: FORMPROC

DESCRIPTION:

DESCRIPTION
PROCESS ITEMS

ARGUMENTS:

PATH = ELEMENT *
PASS_PATH = ELEMENT *
FLDPTR = FIELD *
LEVEL = INT
FIRST_LEV = INT

INCLUDE FILES:

STDTYP - STANDARD TYPE DEFINITIONS
FP CODE - FORM PROCESSOR RETURN CODES
FPD - FORM PROCESSOR DATA
CTYPE - **** PURPOSE NOT FOUND BY STRIPPER ****

ROUTINES CALLED:

PTHPTR/FOUND - HAS anything BEEN FOUND?

CALLED DIRECTLY BY:

PTHPTR/FIELD - MATCH FIELD

3-273
USED IN MAIN PROGRAM(S):

---------------

MONITR/MAI - MAIN MODULE FOR MONITOR/UIS/FP PROCESS
FORM PROCESSOR Module Documentation

NAME: PTHPTR/WINDOW
PURPOSE: PROCESS WINDOW
LANGUAGE: C
MODULE TYPE: FUNCTION
FUNCTION TYPE: INT ()
SOURCE FILE: PTHPTR
SOURCE FILE TYPE: .C
HOST:
SUBSYSTEM: UI
SUBDIRECTORY: FP
DOCUMENTATION GROUP: FORMPROC

DESCRIPTION:
PROCESS WINDOWS. IF PAGE NUMBER IS UNSPECIFIED THE TOP PAGE IS ASSUMED.

ARGUMENTS:
PATH = ELEMENT *
PASS_PATH = ELEMENT *
FLDPTR = FIELD *
LEVEL = INT
FIRST_LEV = INT

INCLUDE FILES:
STDTYP - STANDARD TYPE DEFINITIONS
FP CODE - FORM PROCESSOR RETURN CODES
FPD - FORM PROCESSOR DATA
CTYPE - **** PURPOSE NOT FOUND BY STRIPPER ****

ROUTINES CALLED:
PTHPTR/FIELD - MATCH FIELD
PTHPTR/FOUND - HAS ANYTHING BEEN FOUND?

CALLED DIRECTLY BY:

3-275
PTHPTR/FIELD - MATCH FIELD

USED IN MAIN PROGRAM(S):

MONITR/MAI - MAIN MODULE FOR MONITOR/UIS/FP PROCESS
FORM PROCESSOR Module Documentation

NAME: PUTATT
PURPOSE: PUT ATTRIBUTES
LANGUAGE: C
MODULE TYPE: FUNCTION
FUNCTION TYPE: FORTRAN VOID ()
SOURCE FILE: PUTATT
SOURCE FILE TYPE: .C
HOST:
SUBSYSTEM: UI
SUBDIRECTORY: FP
DOCUMENTATION GROUP: FORMPROC

DESCRIPTION:

---------

SYNOPSIS

FORTRAN VOID PUTATT(EWPATH, DUR, EATTRB, RCODE)

EPATH EWPATH;
SHORT *DUR;
ENAME EATTRB;
CHAR RCODE[];

INPUTS:

EWPATH = PATH TO FIELD POINTER CONTAINING ITEM CONCERNED
DUR = DURATION OF ATTRIBUTE
       (BACKGROUND/PERMINATE/TEMPORARY)
       TO BE PUT IN
EATTRB = ATTRIBUTE TO BE PUT IN

OUTPUTS:

RCODE = RETURN CODE INDICATING WHETHER OPERATION WAS SUCCESSFUL OR NOT (AND WHY NOT).

DESCRIPTION

THIS ROUTINE PUTS IN THE ATTRIBUTE IDENTIFIER FOR FIELDS IF DUR IS PERM OR TEMP THEN ALL ITEMS IN WINDOW OR FORM SPECIFIED OR THE ITEM ITSELF IF IT IS SPECIFIED WILL HAVE THEIR (ITS) PERM.
OR TEMP. ATTRIBUTE SET TO ATTRIBUTE SPECIFIED.

ARGUMENTS:
EWPATH = EPATH
DUR = SHORT *
EATTRB = ENAME
RCODE = CHAR []

INCLUDE FILES:

STDTYP - STANDARD TYPE DEFINITIONS
FPD - FORM PROCESSOR DATA
FPCODE - FORM PROCESSOR RETURN CODES
FPARM - FORM PROCESSOR PARAMETERS

ROUTINES CALLED:

ESCPY - EXTERNAL STRING COPY
SYMSG - SYSTEM MESSAGE ROUTINE
PTHPTR - GET PATH POINTER
PUTATT/AABSAT - ATTRIBUTE ABSOLUTE SET ATTRIBUTE
MEMCPY
GATDEF - GET ATTRIBUTE DEFINITION

CALLED DIRECTLY BY:

CALLFP - CALL FP ROUTINES
UIS/FLWNST - FILL WINDOW MANAGER STRUCTURE

USED IN MAIN PROGRAM(S):

MONITR/MAI - MAIN MODULE FOR MONITOR/UIS/FP PROCESS
FORM PROCESSOR Module Documentation

NAME: PUTATT/AABSAT
PURPOSE: ATTRIBUTE ABSOLUTE SET ATTRIBUTE
LANGUAGE: C
MODULE TYPE: SUBROUTINE
FUNCTION TYPE: VOID ()
SOURCE FILE: PUTATT
SOURCE FILE TYPE: .C
HOST:
SUBSYSTEM: UI
SUBDIRECTORY: FP
DOCUMENTATION GROUP: FORMPROC

DESCRIPTION:
-----------
SYNOPSIS
STATIC VOID AABSAT(DP, DUR, ATTRBT)

INPUTS:
DP = FIELD POINTER TO FIELD STRUCTURE TO BE PROCESSED
DUR = DURATION OF ATTRIBUTE (FORGROUND(PERMINEATE/TMPORARY ATTRIBUTE)/BACKGROUND) TO BE PUT IN
ATTRBT = ATTRIBUTE TO BE PUT IN

DESCRIPTION
THIS ROUTINE ABSOLUTIZES AN ATTRIBUTE NAME RELATIVE TO THE ABSOLUTE ATTRIBUTE OF THE ELEMENT THAT CONTAINS IT (BACKGROUND ATTRIBUTE). THE ATTRIBUTES OF ALL SUBORDINATE NODES IN THE TREE ARE LIKewise ADJUSTED.

ARGUMENTS:
----------
DP = FIELD *
DUR = SHORT *
ATTRBT = ATTMAP *

INCLUDE FILES:
---------------
STDTYPE - STANDARD TYPE DEFINITIONS
FPD - FORM PROCESSOR DATA
FPCODE - FORM PROCESSOR RETURN CODES

3-279
FPFARM - FORM PROCESS: R PARAMETERS

ROUTINES CALLED:

----------
PUTATT/AABSAT - ATTRIBUTE ABSOLUTE SET ATTRIBUTE
MABSAT - MAP ABSOLUTE ATTRIBUTE

CALLED DIRECTLY BY:

----------
PUTATT/AABSAT - ATTRIBUTE ABSOLUTE SET ATTRIBUTE
PUTATT - PUT ATTRIBUTES

USED IN MAIN PROGRAM(S):

----------
MONITR/MAI - MAIN MODULE FOR MONITOR/UIS/FP PROCESS
FORM PROCESSOR Module Documentation

NAME: PUTBAK
PURPOSE: PUT BACKGROUND ATTRIBUTES
LANGUAGE: C
MODULE TYPE: FUNCTION
FUNCTION TYPE: FORTRAN VOID ()
SOURCE FILE: PUTBAK
SOURCE FILE TYPE: .C
HOST:
SUBSYSTEM: UI
SUBDIRECTORY: FP
DOCUMENTATION GROUP: FORMPROC

DESCRIPTION:

SYNOPSIS
FORTRAN VOID PUTBAK(EWPATH, DUR, EATTRB, RCODE)
EPATH EWPATH;
SHORT *DUR;
ENAME EATTRB;
CHAR RCODE[];

INPUTS:
EWPATH = PATH TO FIELD POINTER CONTAINING ITEM CONCERNED
DUR = DURATION OF ATTRIBUTE (PERMINATE/TEMPORARY) TO BE PUT IN
EATTRB = ATTRIBUTE TO BE PUT IN

OUTPUTS:
RCODE = RETURN CODE INDICATING WHETHER OPERATION WAS SUCCESSFUL OR NOT (AND WHY NOT).

DESCRIPTION
THIS ROUTINE PUTS IN THE ATTRIBUTE IDENTIFIER FOR FIELDS IF DUR IS PERM THEN ATTRIBUTE IS PUT INTO PERMINANT ATTRIBUTE AND ALL FIELDS AFFECTED BY ITS ATTRIBUTE ARE ADJUSTED. IF DUR IS TEMP THEN IN ADDITION TO COPYING ATTRIBUTE INTO PERMINANT ATTRIBUTE ETC. THE CURRENT ATTRIBUTE AND CURRENT DP ARE SAVED BEING RESTORED

3-281
AT THE END OF OISCR.

ARGUMENTS:

---------
EWPATH = EPATH
DUR = SHORT *
EATTRB = ENAME
RCODE = CHAR []

INCLUDE FILES:

---------
STDTYP - STANDARD TYPE DEFINITIONS
FPD - FORM PROCESSOR DATA
FP CODE - FORM PROCESSOR RETURN CODES
FPPARM - FORM PROCESSOR PARAMETERS

ROUTINES CALLED:

---------
ESCPY - EXTERNAL STRING COPY
GATDEF - GET ATTRIBUTE DEFINITION
SYSMSG - SYSTEM MESSAGE ROUTINE
MEMCPY
PTHPTR - GET PATH POINTER
RSVATT - RESOLVE ATTRIBUTE

CALLED DIRECTLY BY:

---------
CALLFP - CALL FP ROUTINES

USED IN MAIN PROGRAM(S):

---------
MONITR/MAI - MAIN MODULE FOR MONITOR/UIS/FP PROCESS
FORM PROCESSOR Module Documentation

NAME:             PUTCUR
PURPOSE:          PUT CURSOR
LANGUAGE:         C
MODULE TYPE:      FUNCTION
FUNCTION TYPE:    FORTRAN VOID ()
SOURCE FILE:      PUTCUR
SOURCE FILE TYPE: .C
HOST:             
SUBSYSTEM:        UI
SUBDIRECTORY:     FP
DOCUMENTATION GROUP: FORMPROC

DESCRIPTION:

SYNOPSIS
FORTRAN VOID PUTCUR(EWPATH, CODEP)

EWPATH EWPATH:       
CHAR CODEP[];
INPUTS:
EWPATH - PATH TO FIELD

OUTPUTS:
CODEP - RETURN CODE

DESCRIPTION
PUTCUR POSITIONS THE CURSOR AT THE SPECIFIED FIELD.

ARGUMENTS:

EWPATH = EPATH
CODEP = CHAR []

INCLUDE FILES:

STDTYP - STANDARD TYPE DEFINITIONS
FPD - FORM PROCESSOR DATA
FPISODE - FORM PROCESSOR RETURN CODES

ROUTINES CALLED:

3-283
ESCPY  - EXTERNAL STRING COPY
PTHPTR  - GET PATH POINTER
POSCUR  - POSITION CURSOR
MEMCPY

CALLED DIRECTLY BY:
---------------------
CALLFP  - CALL FP ROUTINES
UIS     - USR INTERFACE SERVICES

USED IN MAIN PROGRAM(S):
------------------------
MONITR/MAI  - MAIN MODULE FOR MONITOR/UIS/FP PROCESS
FORM PROCESSOR Module Documentation

NAME: PUTLOC
PURPOSE: PUT LOCATION
LANGUAGE: C
MODULE TYPE: SUBROUTINE
FUNCTION TYPE: VOID()
SOURCE FILE: PUTLOC
SOURCE FILE TYPE: .C
HOST:
SUBSYSTEM: UI
SUBDIRECTORY: FP
DOCUMENTATION GROUP: FORMPROC

DESCRIPTION:

SYNOPSIS

STATIC VOID PUTLOC(EWPATH, ROW, COL, CODEP)
EPATH EWPATH;
INT ROW, COL;
CHAR CODEP[];

INPUTS:
EWPATH - PATH TO FIELD
ROW    - ROW WITHIN THE FIELD
COL    - COLUMN WITHIN THE FIELD

OUTPUTS:
CODEP - RETURN CODE

DESCRIPTION

PUTS THE CURSOR AT THE SPECIFIED ROW AND COLUMN WITHIN THE
GIVEN FIELD.
THIS DIFFERS FROM THE FP PUTCUR IN THAT IT ALLOWS THE ROW
AND COLUMN
WITHIN A FIELD TO BE SPECIFIED. THE FP PUTCUR ALWAYS PUTS
THE CURSOR
AT ROW 1 COLUMN 1 WITHIN A FIELD.

ARGUMENTS:

EWPATH = EPATH
ROW = INT *
COL = INT *
CODEP = CHAR []

INCLUDE FILES:

- STDTYP - STANDARD TYPE DEFINITIONS
- FPD - FORM PROCESSOR DATA
- FPCODE - FORM PROCESSOR RETURN CODES

ROUTINES CALLED:

- ESCPY - EXTERNAL STRING COPY
- PTHPTR - GET PATH POINTER
- POSCUR - POSITION CURSOR
- MEMCPY

CALLED DIRECTLY BY:

- CALLFP - CALL FP ROUTINES

USED IN MAIN PROGRAM(S):

- MONITR/MAI - MAIN MODULE FOR MONITOR/UIS/FP PROCESS
FORM PROCESSOR Module Documentation

NAME: RMVAP
PURPOSE: REMOVE APPLICATION
LANGUAGE: C
MODULE TYPE: SUBROUTINE
FUNCTION TYPE: VOID ()
SOURCE FILE: RMVAP
SOURCE FILE TYPE: .C
HOST:
SUBSYSTEM: UI
SUBDIRECTORY: FP
DOCUMENTATION GROUP: FORMPROC

DESCRIPTION:

SYNOPSIS

VOID RMVAP(APPTR)
    AP *APTR;

INPUTS/OUTPUTS:

INPUTS:
    APTR - AP STRUCTURE IS TO BE REMOVED

OUTPUTS:
    NONE

DESCRIPTION
    THIS MODULE DELETES AN AP STRUCTURE FROM INTERNAL DATA
    STRUCTURE

ARGUMENTS:

        APTR = AP *

INCLUDE FILES:

        STDTPY - STANDARD TYPE DEFINITIONS
        FPD - FORM PROCESSOR DATA
ROUTINES CALLED:

SPRINTF
PHMSGLS - PUT MESSAGE LINE STRING
CBIT
ATOI
RMVFPO - REMOVE FORM PROCESSOR DATA STRUCTURE
CFREE
dspmsg

CALLED DIRECTLY BY:

MAKAP - MAKE APPLICATION STRUCTURE
MONITR/MAI - MAIN MODULE FOR MONITOR/UIS/FP PROCESS
TRMUSR - TERMINATE USER

USED IN MAIN PROGRAM(S):

MONITR/MAI - MAIN MODULE FOR MONITOR/UIS/FP PROCESS
FORM PROCESSOR Module Documentation

NAME: RMVFPD
PURPOSE: REMOVE FORM PROCESSOR DATA STRUCTURE
LANGUAGE: C
MODULE TYPE: SUBROUTINE
FUNCTION TYPE: VOID ()
SOURCE FILE: RMVFPD
SOURCE FILE TYPE: .C
HOST: SUBSYSTEM: UI
SUBDIRECTORY: FP
DOCUMENTATION GROUP: FORMPROC

DESCRIPTION:

SYNOPSIS

VOID RMVFPD(FPDPTR)
    FPD *FPDPtr;

DESCRIPTION
TERMINATE FORM PROCESSOR.

ARGUMENTS:

FPDPtr = FPD 

INCLUDE FILES:

STDTPY - STANDARD TYPE DEFINITIONS
FPD - FORM PROCESSOR DATA
CTLCHR - CONTROL CHARACTERS

ROUTINES CALLED:

FREMMSG - POSITION CURSOR
POSCUR - POSITION CURSOR
SPRINTF
PDVOTP - PUT DEVICE OUTPUT
STRLEN
DELFILD - DELETE FIELD
CFREE
CALLED DIRECTLY BY:

- CLSLDV - CLOSE LOGICAL DEVICE
- RMVAP - REMOVE APPLICATION
- RMVPD - REMOVE PHYSICAL DEVICE DATA STRUCTURE

USED IN MAIN PROGRAM(S):

- MONITR/MAI - MAIN MODULE FOR MONITOR/UIS/FP PROCESS
FORM PROCESSOR Module Documentation

NAME: RMVPAG
PURPOSE: REMOVE PAGE
LANGUAGE: C
MODULE TYPE: FUNCTION
FUNCTION TYPE: FORTRAN VOID ()
SOURCE FILE: RMVPAG
SOURCE FILE TYPE: .C
HOST: SUBSYSTEM. UI
SUBDIRECTORY: FP
DOCUMENTATION GROUP: FORMPROC

DESCRIPTION:

SYNOPSIS
FORTRAN VOID RMVPAG(EWPATH, PNUMP, RCODE)
  EWPATH EPATH;
  INT *PNUMP;
  CHAR RCODE[];

INPUTS:
EWPATH - WINDOW TO REMOVE FROM
PNUMP - PAGE NUMBER TO REMOVE

OUTPUTS:
RCODE - RETURN CODE

DESCRIPTION
USE RMVPAG TO REMOVE A PAGE FROM A WINDOW. WHEN A PAGE
IS REMOVED ALL PAGES ABOVE IT (I.E. HAVE LARGER PAGE
NUMBERS) ARE ALSO REMOVED.

ARGUMENTS:
EWPATH = EPATH
PNUMP = INT *
RCODE = CHAR []

INCLUDE FILES:
STDTYP - STANDARD TYPE DEFINITIONS

3-291
FPD       - FORM PROCESSOR DATA
FPCODE    - FORM PROCESSOR RETURN CODES
FPPARM    - FORM PROCESSOR PARAMETERS

ROUTINES CALLED:

ESCPY     - EXTERNAL STRING COPY
PTHPTR    - GET PATH POINTER
SYSMSG    - SYSTEM MESSAGE ROUTINE
DELF LD    - DELETE FIELD
MAX
STRASN
MEMCPY

CALLED DIRECTLY BY:

CALLFP    - CALL FP ROUTINES
UIS        - USR INTERFACE SERVICES

USED IN MAIN PROGRAM(S):

MONITR'MAI - MAIN MODULE FOR MONITOR/UIS/FP PROCESS
FORM PROCESSOR Module Documentation

NAME: RMVPD
PURPOSE: REMOVE PHYSICAL DEVICE DATA STRUCTURE
LANGUAGE: C
MODULE TYPE: SUBROUTINE
FUNCTION TYPE: VOID
SOURCE FILE: RMVPD
SOURCE FILE TYPE: .C
HOST: SUBSYSTEM: UI
SUBDIRECTORY: FP
DOCUMENTATION GROUP: FORMPROC

DESCRIPTION:

SYNOPSIS

VOID RMVPD(PDPTR)
   PD *PDPTR;
   INT FLG;

INPUTS/OUTPUTS:

INPUTS:
   PDPTR - PD STRUCTURE IS TO BE REMOVED
   FLG - 0 = DO NOT REMOVE LOGICAL DEVICE(FPD) - NRMVPD
         1 = REMOVE LOGICAL DEVICE(FPD) AND CALL TRMDRV
             - RMVPD
         2 = DO NOT CALL TRMDRV DEVICE ALREADY DEAD - DEAD

OUTPUTS:
   NONE

DESCRIPTION
   THIS MODULE DELETES AN PD STRUCTURE FROM INTERNAL DATA STRUCTURE

ARGUMENTS:

   PDPTR = PD *
   FLG = INT
INCLUDE FILES:

- STDYP - STANDARD TYPE DEFINITIONS
- FPD - FORM PROCESSOR DATA
- FPCODE - FORM PROCESSOR RETURN CODES

ROUTINES CALLED:

- FCLOSE
- RMVFPD - REMOVE FORM PROCESSOR DATA STRUCTURE
- TRMDRV - TERMINATE DEVICE DRIVER
- CFREE

CALLED DIRECTLY BY:

- MAKUSR - MAKE USER
- MONITR/MAI - MAIN MODULE FOR MONITOR/UIS/FP PROCESS
- TRMUSR - TERMINATE USER
- UIS/STRTAP - START APPLICATION
- UIS/PRCINP - PROCESS INPUT

USED IN MAIN PROGRAM(S):

- MONITR/MAI - MAIN MODULE FOR MONITOR/UIS/FP PROCESS
FORM PROCESSOR Module Documentation

NAME: RPLFRM
PURPOSE: REPLACE FORM
LANGUAGE: C
FUNCTION TYPE: FORTRAN VOID ()
SOURCE FILE: RPLFRM
SOURCE FILE TYPE: .C

DESCRIPTION:

SYNOPSIS
FORTRAN VOID RPLFRM(EWPATH, PNUMP, EFNAME, RCODE)
  EPATH EWPATH;
  INT *PNUMP;
  ENAME EFNAME;
  CHAR RCODE[];

INPUTS:
  EWPATH - PATH OF WINDOW TO REPLACE IN
  PNUMP - PAGE NUMBER TO REPLACE
  EFNAME - FORM TO REPLACE WITH

OUTPUTS:
  RCODE - RETURN CODE

DESCRIPTION
USE RPLFRM TO REPLACE A FORM IN A WINDOW.

ARGUMENTS:

EWPATH = EPATH
PNUMP = INT *
EFNAME = ENAME
RCODE = CHAR []

INCLUDE FILES:

3-295
STDTYP - STANDARD TYPE DEFINITIONS
FPD - FORM PROCESSOR DATA
FPCODE - FORM PROCESSOR RETURN CODES

ROUTINES CALLED:

---------------
ESCPY - EXTERNAL STRING COPY
PTHPTR - GET PATH POINTER
SYSMSG - SYSTEM MESSAGE ROUTINE
DELFLD - DELETE FIELD
COPFRM - COPY FORM
RSVATT - RESOLVE ATTRIBUTE
MEMCPY

CALLED DIRECTLY BY:

---------------
CALLFP - CALL FP ROUTINES

USED IN MAIN PROGRAM(S):

---------------
MONITR/MAI - MAIN MODULE FOR MONITOR/UIS/FP PROCESS
FORM PROCESSOR Module Documentation

NAME:            RSVATT
PURPOSE:         RESOLVE ATTRIBUTE
LANGUAGE:        C
MODULE TYPE:     SUBROUTINE
FUNCTION TYPE:   VOID ()
SOURCE FILE:     RSVATT
SOURCE FILE TYPE: .C
HOST:            
SUBSYSTEM:       UI
SUBDIRECTORY:    FP
DOCUMENTATION GROUP: FORMPROC

DESCRIPTION:

SYNOPSIS

VOID RSVATT(DP)
FIELD *DP

INPUTS:

*DP - FIELD POINTER OF FIELD WHOSE ATTRIBUTE IS BEING RESOVED.

DESCRIPTION

RSVATT RESOLVES BACKGROUND ATTRIBUTES

ARGUMENTS:

DP = FIELD

INCLUDE FILES:

STDTYP - STANDARD TYPE DEFINITIONS
FPD - FORM PROCESSOR DATA

ROUTINES CALLED:

RSVATT/RSVRST - RESOLVE REST
STRASN
CALLED DIRECTLY BY:

----------
COPFLD    - COPY FIELD
PUTBAK    - PUT BACKGROUND ATTRIBUTES
RPLFRM    - REPLACE FORM

USED IN MAIN PROGRAM(S):

------------------
MONITR/MAI - MAIN MODULE FOR MONITOR/UIS/FP PROCESS
FORM PROCESSOR Module Documentation

NAME: RSVATT/RSVRST
PURPOSE: RESOLVE REST
LANGUAGE: C
MODULE TYPE: SUBROUTINE
FUNCTION TYPE: VOID()
SOURCE FILE: RSVATT
SOURCE FILE TYPE: .C
HOST:
SUBSYSTEM: UI
SUBDIRECTORY: FP
DOCUMENTATION GROUP: FORMPROC

DESCRIPTION:

SYNOPSIS

STATIC VOID RSVRST(DP)
    FIELD *DP;

INPUTS:

*DP - FIELD POINTER OF 1RST FIELD IN LEVEL BEING RESOLVED.

DESCRIPTION

RSVRST DOES THE REAL WORK OF RESOLVING BACKGROUND ATTRIBUTES

ARGUMENTS:

---------

DP = FIELD *

INCLUDE FILES:

---------

STDTYP - STANDARD TYPE DEFINITIONS
FPD - FORM PROCESSOR DATA

ROUTINES CALLED:

---------

RSVATT/RSVRST - RESOLVE REST
STRASN
MABSAT - MAP ABSOLUTE ATTRIBUTE

3-299
CALLED DIRECTLY BY:
---------------------
RSVATT/RSVRST - RESOLVE REST
RSVATT     - RESOLVE ATTRIBUTE

USED IN MAIN PROGRAM(S):
---------------------
MONITR/MAI - MAIN MODULE FOR MONITOR/UIS/FP PROCESS
FORM PROCESSOR Module Documentation

NAME: RSVEXP
PURPOSE: RESOLVE EXPRESSIONS
LANGUAGE: C
MODULE TYPE: FUNCTION
FUNCTION TYPE: CHAR *( )
SOURCE FILE: RSVEXP
SOURCE FILE TYPE: .C
HOST:
SUBSYSTEM: UI
SUBDIRECTORY: FP
DOCUMENTATION GROUP: FORMPROC

DESCRIPTION:

SYNOPSIS

CHAR *RSVEXP(DP)
FIELD *DP;

INPUTS:
DP - POINTER TO FIELD TO RESOLVE

DESCRIPTION

ALL ITEMS SUBORDINATE TO THE GIVEN FIELD ARE EXAMINED FOR
AN EXPRESSION
WHICH IS BUILT INTO A TREE AND EVALUATED.

ARGUMENTS:

DP = FIELD *

INCLUDE FILES:

STDTYP - STANDARD TYPE DEFINITIONS
CTYPE - **** PURPOSE NOT FOUND BY STRIPPER ****
FPD - FORM PROCESSOR DATA
FPCODE - FORM PROCESSOR RETURN CODES

ROUTINES CALLED:

RSVEXP/BLDEXP - BUILD EXPRESSION TREE

3-301
PS 620144200
1 November 1985

SYSMSG - SYSTEM MESSAGE ROUTINE
Rsvexp - RESOLVE EXPRESSIONS
Cmpfld - COMPUTE FIELD

CALLED DIRECTLY BY:

ADDELM - ADD ELEMENT
COPFRM - COPY FORM
Rsvexp - RESOLVE EXPRESSIONS

USED IN MAIN PROGRAM(S):

MONITR/MAI - MAIN MODULE FOR MONITOR/UIS/FP PROCESS
NAME: RSVEXP/BLDEXP
PURPOSE: BUILD EXPRESSION TREE
LANGUAGE: C
MODULE TYPE: FUNCTION
FUNCTION TYPE: CHAR *( )
SOURCE FILE: RSVEXP
SOURCE FILE TYPE: .C
HOST:
SUBSYSTEM: UI
SUBDIRECTORY: FP
DOCUMENTATION GROUP: FORMPROC

DESCRIPTION:

SYNOPSIS

STATIC CHAR *BLDEXP(DP, S, EPP)
FIELD *DP;
CHAR **S;
ENODE **EPP;

INPUTS:
DP - POINT ER TO FIELD CONTAINING THE EXPRESSION
S - EXPRESSION STRING TO BUILD TREE FROM

OUTPUTS:
EPP - POINTER TO ROOT OF BUILT TREE
RETURNS AN ERROR CODE OR NULL

DESCRIPTION
SETS A POINTER TO THE ROOT OF THE EXPRESSION TREE BUILT
FROM THE SUPPLIED STRING.

ARGUMENTS:

-----------
DP = FIELD *
SP = CHAR **
EPP = ENODE **

INCLUDE FILES:

-----------
STDTYP - STANDARD TYPE DEFINITIONS

3-303
CTYPE - "** PURPOSE NOT FOUND BY STRIPPER **"
FPD - FORM PROCESSOR DATA
FPCODE - FORM PROCESSOR RETURN CODES

ROUTINES CALLED:
--------
FREE
RSVEXP/BLDEXP - BUILD EXPRESSION TREE
ISDIGIT
STRCHR
PTHPTR - GET PATH POINTER
SYMSMG - SYSTEM MESSAGE ROUTINE
MALLOC

CALLED DIRECTLY BY:
--------
RSVEXP/BLDEXP - BUILD EXPRESSION TREE
RSVEXP - RESOLVE EXPRESSIONS

USED IN MAIN PROGRAM(S):
--------
MONITR/MAI - MAIN MODULE FOR MONITOR/UIS/FP PROCESS
FORM PROCESSOR Module Documentation

NAME: SFPDAP
PURPOSE: SET FORM PROCESSOR DATA STRUCTURE FOR APPLICATION
LANGUAGE: C
MODULE TYPE: FUNCTION
FUNCTION TYPE: CHAR * ()
SOURCE FILE: SFPDAP
SOURCE FILE TYPE: .C
HOST: SUBSYSTEM UI
SUBDIRECTORY FP
DOCUMENTATION GROUP: FORMPROC

DESCRIPTION:

SYNOPSIS
CHAR *SFPDAP(APNAM,APCHAN)
    NAME APNAM:
    CHAN APCHAN:

INPUTS OUTPUTS:

INPUTS:
APNAM - NAME OF AP STRUCTURE WILL BE FOR - FROM NTM
APCHAN - UNIQUE INSTANCE OF AP - FROM NTM

OUTPUTS:
RETURNS POINTER TO ERROR CODE FOR FORM PROCESSOR IF ERROR
OR A NULL POINTER

DESCRIPTION
THIS MODULE IS CALLED BY MONITOR ROUTINE TO SET UP THE FPD STRUCTURE IN ORDER TO MAKE ITS CALL TO "CALLFP".

ARGUMENTS:
---------------
APNAM = ENAME
APCHAN = CHAN
INCLUDE FILES

STDTYPE - STANDARD TYPE DEFINITIONS
FPD - FORM PROCESSOR DATA
FPCODE - FORM PROCESSOR RETURN CODES

ROUTINES CALLED

ESCPY - EXTERNAL STRING COPY
STRCMP
SYSMSG - SYSTEM MESSAGE ROUTINE

CALLED DIRECTLY BY

MONITR/MAI - MAIN MODULE FOR MONITOR/UIS/FP PROCESS

USED IN MAIN PROGRAM(S):

MONITR/MAI - MAIN MODULE FOR MONITOR/UIS/FP PROCESS
FORM PROCESSOR Module Documentation

NAME: STUPFP
PURPOSE: SET UP FORM PROCESSOR DATA STRUCTURES
LANGUAGE: C
MODULE TYPE: FUNCTION
FUNCTION TYPE: CHAR * ( )
SOURCE FILE: STUPFP
SOURCE FILE TYPE: C
HOST:
SUBSYSTEM: UI
SUBDIRECTORY: FP
DOCUMENTATION GROUP: FORMPROC

DESCRIPTION:

SYNOPSIS

CHAR *STUPFP(FPDPTR)

FPD *FPD PTR;

INPUTS/OUTPUTS:

INPUTS:
FPDPTR - POINTER TO LOGICAL DEVICE(FPD)

OUTPUTS:
RETURNS A POINTER TO ERROR CODE IF ERROR OR A NULL
POINTER NO ERROR

DESCRIPTION

OPEN PSCREEN FORM, CREATES FIRST WINDOW AND COPIES THIS
STRUCTURE INTO
FIELD DISPLAY LIST (FIRST ENTRY).

ARGUMENTS:

FPDPTR = FPD *

INCLUDE FILES:

STD TYP - STANDARD TYPE DEFINITIONS
FPD - FORM PROCESSOR DATA
FPCODE - FORM PROCESSOR RETURN CODES
ROUTINES CALLED:

- GATDEF - GET ATTRIBUTE DEFINITION
- MAKFLD - MAKE FIELD
- COPFRM - COPY FORM
- SYMSG - SYSTEM MESSAGE ROUTINE
- SBIT
- STRASN
- FFBCA

CALLED DIRECTLY BY:

- MAKAP - MAKE APPLICATION STRUCTURE
- MAKUSR - MAKE USER
- OPNLDV - OPEN LOGICAL DEVICE

USED IN MAIN PROGRAM(S):

- MONITR/MAI - MAIN MODULE FOR MONITOR/UIS/FP PROCESS
FORM PROCESSOR Module Documentation

NAME: SYSMSG
PURPOSE: SYSTEM MESSAGE ROUTINE
LANGUAGE: C
MODULE TYPE: FUNCTION
FUNCTION TYPE: CHAR * ()
SOURCE FILE: SYSMSG
SOURCE FILE TYPE: .C
HOST: SUBSYSTEM: UI
SUBDIRECTORY: FP
DOCUMENTATION GROUP: FORMPROC

DESCRIPTION:

SYNOPSIS

CHAR *SYSMSG(CODE)
CHAR *CODE;

INPUTS:
CODE = ERROR CODE

DESCRIPTION

IF ERROR CODE IS FATAL TO FORM PROCESSOR (79,000 < 79.999), IT
GETS ERROR CODE AND ERROR MESSAGES AND PASSES THEM TO
ERRPRO()
WHICH WRITES THEM TO AN ERROR LOG FILE

ARGUMENTS:

CHAR *

INCLUDE FILES:

STDTYP - STANDARD TYPE DEFINITIONS
FPD - FORM PROCESSOR DATA
FPCODE - FORM PROCESSOR RETURN CODES

ROUTINES CALLED:

3-309
ATOI
FNDMSG   - FIND MESSAGE
ERRPRO
STRNCMP
PMSGCLC   - PUT MESSAGE LINE CODE

CALLED DIRECTLY BY:

ADDEL M   - ADD ELEMENT
ADDFRM    - ADD FORM TO WINDOW
CALLFP    - CALL FP ROUTINES
CLSFRM    - CLOSE FORM
CMPFLD/EVA - EVALUATE FIELD EXPRESSION
CMPFLD    - COMPUTE FIELD
COPFLD/COPYFLD - INTERNAL COPY FIELD
COPFRM     - COPY FORM
DELFLD     - DELETE FIELD
GATDEF     - GET ATTRIBUTE DEFINITION
GDATA      - GET DATA
GDVINP     - GET DEVICE INPUT
GETATT     - GET ATTRIBUTE
GETBAK     - GET BACKGROUND ATTRIBUTE
GETCUR     - GET CURSOR POSITION
GPAGE      - GET PAGE
MAKAP       - MAKE APPLICATION STRUTURE
MAKFLD     - MAKE FIELD
MAKUSR      - MAKE USER
MONITR/MAI - MAIN MODULE FOR MONITOR/UIS/FP PROCESS
OISCR/CNGMSG - CHECK FOR AND PROCESS CHANGE MESSAGE REQUESTS
OISCR/PROCFLD - PROCESS FIELD
OISCR/EVTBUF - EMPTY VTI BUFFER
ONWISC     - OUTPUT (NO WAIT) / INPUT SCREEN
INSCR       - INPUT SCREEN
OPNFRM/PFREC - PROCESS FORM RECORD
OPNFRM/PTREC - PROCESS TEXT RECORD
OPNFRM/PDREC - PROCESS FIELD RECORD
OPNFRM/PAR  - PROCESS ARRAY
OPNFRM/PIT  - PROCESS ITEM
OPNFRM/PFR  - PROCESS FORM
OPNFRM/BTBUFF - BUILD TEXT BUFFER
OPNFRM/BDBUFF - BUILD DEFAULT BUFFER
OPNFRM/BFLDDDB - BUILD FIELD DEFAULT BUFFER
OPNFRM/BRPNOD - BUILD RELATIVE POSITION NODE
OPNFRM      - OPEN FORM
PARFQN      - PARSE FULLY QUALIFIED NAME
PDATA/PUTBUF - PUT BUFFER
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**USED IN MAIN PROGRAM(S):**

**MONITR/MAI** - MAIN MODULE FOR MONITOR/UIS/FP PROCESS
FORM PROCESSOR Module Documentation

NAME: TERMVT
PURPOSE: TERMINATE VIRTUAL TERMINAL INTERFACE
LANGUAGE: C
MODULE TYPE: SUBROUTINE
FUNCTION TYPE: VOID ()
SOURCE FILE: TERMVT
SOURCE FILE TYPE: .C
HOST: SUBSYSTEM: UI
SUBDIRECTORY: FP
DOCUMENTATION GROUP: FORMPROC

DESCRIPTION:

SYNOPSIS
TERMVT(RCODE)
    CHAR RCODE[]

INPUTS/OUTPUTS:

INPUTS:
    NONE

OUTPUTS:
    RCODE - STANDARD FORM PROCESSOR RETURN CODE

DESCRIPTION

CLEARS VTI MODE FLAG AND SET MAX BUFF LENGTH BACK TO 0

ARGUMENTS:

    RCODE = CHAR []

INCLUDE FILES:

    STDTYP - STANDARD TYPE DEFINITIONS
    FPD - FORM PROCESSOR DATA
    FPCODE - FORM PROCESSOR RETURN CODES
ROUTINES CALLED:
-------------------
MEMCPY

CALLED DIRECTLY BY:
---------------------
CALLFP - CALL FP ROUTINES

USED IN MAIN PROGRAM(S):
-------------------------
MONITR/MAI - MAIN MODULE FOR MONITOR/UIS/FP PROCESS
FORM PROCESSOR Module Documentation

NAME: TRMDRV
PURPOSE: TERMINATE DEVICE DRIVER
LANGUAGE: C
MODULE TYPE: SUBROUTINE
FUNCTION TYPE: VOID ()
SOURCE FILE: TRMDRV
SOURCE FILE TYPE: .C
HOST: SUBSYSTEM: UI
SUBDIRECTORY: FP
DOCUMENTATION GROUP: FORMPROC

DESCRIPTION:

SYNOPSIS

VOID TRMDRV(PDPTR)
   PD *PDPTR;

INPUTS/OUTPUTS:

INPUTS:
   PDPTR - POINTER TO DEVICE DRIVER TERMINATING

OUTPUTS:
   NONE

DESCRIPTION
   THIS MODULE SENDS A SHUT DOWN MESSAGE TO DEVICE DRIVER
   POINTED TO

ARGUMENTS:

     PDPTR = PD *

INCLUDE FILES:

     STDTYP - STANDARD TYPE DEFINITIONS
     FPD    - FORM PROCESSOR DATA
     FPCODE - FORM PROCESSOR RETURN CODES

3-314
NTH - NTM INTERFACE INCLUDE FILE

ROUTINES CALLED:
-----------------
MEMSET
MEMCPY
STRLN
NSEND
MEMCMP
SYSMSG - SYSTEM MESSAGE ROUTINE

CALLED DIRECTLY BY:
---------------------
RMVPD - REMOVE PHYSICAL DEVICE DATA STRUCTURE

USED IN MAIN PROGRAM(S):
------------------------
MONITR/MAI - MAIN MODULE FOR MONITOR/UIS/FP PROCESS
FORM PROCESSOR Module Documentation

NAME: TRMUSR
PURPOSE: TERMINATE USER
LANGUAGE: C
MODULE TYPE: SUBROUTINE
FUNCTION TYPE: VOID ()
SOURCE FILE: TRMUSR
SOURCE FILE TYPE: .C
HOST: SUBSYSTEM: UI
SUBDIRECTORY: FP
DOCUMENTATION GROUP: FORMPROC

DESCRIPTION:

SYNOPSIS

VOID TRMUSR(USRPRTR)
USR *USRPRTR;

INPUTS/OUTPUTS:

INPUTS:
 USRPRTR – USER STRUCTURE IS TO BE REMOVED

OUTPUTS:
NONE

DESCRIPTION

THIS MODULE DELETES A USER STRUCTURE FROM INTERNAL DATA
STRUCTURE
AND SENDS TERMINATING MESSAGES TO ALL THE USER’S PROCESSES

ARGUMENTS:

-------------
USRPRTR = USR *

INCLUDE FILES:

-------------
STDTYP - STANDARD TYPE DEFINITIONS
FPD - FORM PROCESSOR DATA
FPcode - FORM PROCESSOR RETURN CODES

3-316
NTM - NTM INTERFACE INCLUDE FILE

ROUTINES CALLED:

MEMSET
MEMCPY
STRLEN
SIGABT
MEMCMP
SYSMSG - SYSTEM MESSAGE ROUTINE
RMVAP - REMOVE APPLICATION
RMVPD - REMOVE PHYSICAL DEVICE DATA STRUCTURE
CFREE

CALLED DIRECTLY BY:

MAKUSR - MAKE USER
MONITR/MAI - MAIN MODULE FOR MONITOR/UIS/FP PROCESS
UIS - USR INTERFACE SERVICES

USED IN MAIN PROGRAM(S):

MONITR/MAI - MAIN MODULE FOR MONITOR/UIS/FP PROCESS
FORM PROCESSOR Module Documentation

NAME: UIS
PURPOSE: USR INTERFACE SERVICES
LANGUAGE: C
MODULE TYPE: SUBROUTINE
FUNCTION TYPE: VOID ()
SOURCE FILE: UIS
SOURCE FILE TYPE: .C
HOST:
SUBSYSTEM: UI
SUBDIRECTORY: FP
DOCUMENTATION GROUP: FORMPROC

DESCRIPTION:

SYNOPSIS
UIS()

INPUTS/OUTPUTS:

INPUTS:
NONE

OUTPUTS:
NONE

DESCRIPTION
THIS MODULE CONTAINES THE USER INTERFACE LOGON, FUNCTION
ICK
AND WINDOW MANAGER SERVICE.

INCLUDE FILES:

- STDTYPE - STANDARD TYPE DEFINITIONS
- FPD - FORM PROCESSOR DATA
- FPPARM - FORM PROCESSOR PARAMETERS
- FPCODE - FORM PROCESSOR RETURN CODES
- CTLCR - CONTROL CHARACTERS
- DBASEI - DATABASE INTERFACE
- NTM - NTM INTERFACE INCLUDE FILE

3-318
UISFM - UIS FORM

ROUTINES CALLED:

- OPNFRM - OPEN FORM
- MEMCMP
- UIS/PRCWND - PROCESS WINDOW
- UIS/FLWNST - FILL WINDOW MANAGER STRUCTURE
- PMSGLC - PUT MESSAGE LINE CODE
- DBCROL - CHECK ROLE
- PUTCUR - PUT CURSOR
- MEMSET
- MEMCPY
- UIS/STRTAP - START APPLICATION
- PDATA - PUT FORM DATA
- ESCPY - EXTERNAL STRING COPY
- SPRINTF
- PDVOTP - PUT DEVICE OUTPUT
- STRLEN
- ONWISC - OUTPUT (NO WAIT) / INPUT SCREEN
- SYMSG - SYSTEM MESSAGE ROUTINE
- TRMUSR - TERMINATE USER
- OUTSCR - OUTPUT SCREEN
- PMSGLS - PUT MESSAGE LINE STRING
- RMVPAG - REMOVE PAGE
- DBCUPR
- GDATA - GET DATA
- ADDFRM - ADD FORM TO WINDOW

 CALLED DIRECTLY BY:

- MONITR/MAI - MAIN MODULE FOR MONITOR/UIS/FP PROCESS

USED IN MAIN PROGRAM(S):

- MONITR/MAI - MAIN MODULE FOR MONITOR/UIS/FP PROCESS
FORM PROCESSOR Module Documentation

NAME:UIS'FLWINF
PURPOSE:FILL WINDOW INFORMATION
LANGUAGE:C
MODULE TYPE:SUBROUTINE
FUNCTION TYPE:VOID()
SOURCE FILE:UIS
SOURCE FILE TYPE:C
HOST:SUBSYSTEM.UI
SUBDIRECTORY:FP
DOCUMENTATION GROUP:FORMPROC

DESCRIPTION:

SYNOPSIS

STATIC VOID FLWINF(WNMNGR, APNAM, APCHAN, DP, lev)

STRUCT WNMNGR *WNMNGR;
NAME APNAM;
CHAN APCHAN;
FIELD *DP;
INT *I;

INPUTS/OUTPUTS:

INPUTS:
WNMNGR - DATA STRUCTURE FOR WINDOW MANAGER WHICH IS TO BE FILLED
APNAM - NAME OF APPLICATION TO WHICH WINDOW BELONGS
APCHAN - CHANNEL OF APPLICATION TO WHICH WINDOW BELONGS
DP - POINTER TO CURRENT FIELD
INT - INDEX ARRAY OF DATA STRUCTURES

OUTPUTS:
NONE

DESCRIPTION

THIS MODULE FILLS DATA STRUCTURE FOR PARTICULAR WINDOW FROM FPD STRUCTURE

ARGUMENTS:

WNMNGR = STRUCT WNMNGR *
APNAM = NAME
APCHAN = CHAN
DP = FIELD 'I = INT '

INCLUDE FILES:

STDTYP - STANDARD TYPE DEFINITIONS
FPD - FORM PROCESSOR DATA
FPARM - FORM PROCESSOR PARAMETERS
FP CODE - FORM PROCESSOR RETURN CODES
CTLCHR - CONTROL CHARACTERS
DBASEI - DATABASE INTERFACE
NTM - NTM INTERFACE INCLUDE FILE
UISFM - UIS FORM

ROUTINES CALLED:

UIS/FLWINF - FILL WINDOW INFORMATION
PRINTF

CALLED DIRECTLY BY:

UIS/FLWNST - FILL WINDOW MANAGER STRUCTURE
UIS/FLWINF - FILL WINDOW INFORMATION

USED IN MAIN PROGRAM(S):

MONITR/MAI - MAIN MODULE FOR MONITOR/UIS/FP PROCESS

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FORM PROCESSOR Module Documentation

NAME: UIS/FLWNST
PURPOSE: FILL WINDOW MANAGER STRUCTURE
LANGUAGE: C
MODULE TYPE: FUNCTION
FUNCTION TYPE: BOOL()
SOURCE FILE: UIS
SOURCE FILE TYPE: .C
HOST:
SUBSYSTEM: UI
SUBDIRECTORY: FP
DOCUMENTATION GROUP: FORMPROC

DESCRIPTION:

SYNOPSIS

STATIC BOOL FLWNST(WNMNGR)
    STRUCT WNMNGR *WNMNGR;

INPUTS/OUTPUTS:

INPUTS:
WNMNGR - DATA STRUCTURE FOR WINDOW MANAGER WHICH IS TO BE FILLED

OUTPUTS:
RETURNS SUCCESS/FAILURE

DESCRIPTION
THIS MODULE FILLS DATA STRUCTURE FOR WINDOW MANAGER FROM FPD STRUCTURE

ARGUMENTS:

------------
WNMNGR = STRUCT WNMNGR *

INCLUDE FILES:

------------
STDTyp - STANDARD TYPE DEFINITIONS
FPD - FORM PROCESSOR DATA
FPParm - FORM PROCESSOR PARAMETERS
FPCode - FORM PROCESSOR RETURN CODES

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CTLCHR - CONTROL CHARACTERS
DBASEI - DATABASE INTERFACE
NTM - NTM INTERFACE INCLUDE FILE
UISFM - UIS FORM

ROUTINES CALLED:
-------------------
UIS/FLWINF - FILL WINDOW INFORMATION
ESCPY - EXTERNAL STRING COPY
MEMCMP
PUTATT - PUT ATTRIBUTES
SPRINTF
MEMSET

CALLED DIRECTLY BY:
-------------------
UIS - USR INTERFACE SERVICES

USED IN MAIN PROGRAM(S):
-------------------------
MONITR/MAI - MAIN MODULE FOR MONITOR/UIS/FP PROCESS
FORM PROCESSOR Module Documentation

NAME: UIS/PRCINP
PURPOSE: PROCESS INPUT
LANGUAGE: C
MODULE TYPE: FUNCTION
FUNCTION TYPE: FPD * ()
SOURCE FILE: UIS
SOURCE FILE TYPE: C
HOST:
SUBSYSTEM: UI
SUBDIRECTORY: FP
DOCUMENTATION GROUP: FORMPROC

DESCRIPTION:

SYNOPSIS

STATIC FPD *PRCINP(WNINP, OWNINP)
STRUCT WNDMNGINP *WNINP
STRUCT WNDMNGINP *OWNINP;

INPUTS/OUTPUTS:

INPUTS:
WNINP - DATA STRUCTURE FOR WINDOW MANAGER WHICH IS TO BE PROCESSED
OWNINP - OLD DATA STRUCTURE - USED TO SEE IF CHANGES WERE MADE

OUTPUTS:
RETURNS POINTER TO FPD STRUCTURE IF SUCCESS ELSE A NULL

DESCRIPTION

THIS MODULE PROCESSES WINDOW MANAGER INPUT AND MAKES THE APPROPRIATE CHANGES TO FPD DATA STRUCTURE.

ARGUMENTS:

WNINP = STRUCT WNDMNGINP *
OWNINP = STRUCT WNDMNGINP *

INCLUDE FILES:

3-324
STDTYP - STANDARD TYPE DEFINITIONS
FPD - FORM PROCESSOR DATA
FPARM - FORM PROCESSOR PARAMETERS
FPCODE - FORM PROCESSOR RETURN CODES
CTLCCHR - CONTROL CHARACTERS
DBASEI - DATABASE INTERFACE
NTM - NTM INTERFACE INCLUDE FILE
UISFM - UIS FORM

ROUTINES CALLED:

MAX
MIN
ULKFPD - UNLINKK FPD
RMVPD - REMOVE PHYSICAL DEVICE DATA STRUCTUE
STLEN
PDVOTP - PUT DEVICE OUTPUT
PRINTF
UIS/STRTPD - START PHYSICAL DEVICE
SYMSMNG - SYSTEM MESSAGE ROUTINE
STRCMP
ESCPY - EXTERNAL STRING COPY
FNFPWNN - FIND FORM PROCESSOR WINDOW
MEMCMP
MATOI

CALLED DIRECTLY BY:

UIS/PRCWND - PROCESS WINDOW

USED IN MAIN PROGRAM(S):

MONITR/MAI - MAIN MODULE FOR MONITOR/UIS/FP PROCESS
FORM PROCESSOR Module Documentation

NAME: UIS/PRCWND
PURPOSE: PROCESS WINDOW
LANGUAGE: C
MODULE TYPE: FUNCTION
FUNCTION TYPE: BOOL ()
SOURCE FILE: UIS
SOURCE FILE TYPE: .C
HOST:
SUBSYSTEM: UI
SUBDIRECTORY: FP
DOCUMENTATION GROUP: FORMPROC

DESCRIPTION:

SYNOPSIS
STATIC VOID PRCWND(WNMNGR, OWNMNGR)
STRUCT WNMNGR *WNMNGR;
STRUCT WNMNGR *OWNMNGR;

INPUTS/OUTPUTS:

INPUTS:
WNMNGR - DATA STRUCTURE FOR WINDOW MANAGER WHICH IS TO BE FILLED

OUTPUTS:
RETURNS SUCCESS/FAILURE

DESCRIPTION
THIS MODULE PROCESSES WINDOW MANAGER INPUT AND MAKES THE APPROPRIATE CHANGES TO FPD DATA STRUCTURE.

ARGUMENTS:

WNMNGR = STRUCT WNMNGR *
OWNMNGR = STRUCT WNMNGR *

INCLUDE FILES:

STDTYP - STANDARD TYPE DEFINITIONS
FPD - FORM PROCESSOR DATA
FPPARM - FORM PROCESSOR PARAMETERS
FPUCODE - FORM PROCESSOR RETURN CODES
CTLCHR - CONTROL CHARACTERS
DBASEI - DATABASE INTERFACE
NTM - NTM INTERFACE INCLUDE FILE
UISFM - UIS FORM

ROUTINES CALLED:

CHGPRC - CHANGE PRECEDENCE OF WINDOW OR LOGICAL DEVICE
PMSGLS - PUT MESSAGE LINE STRING
SPRINTF
MATOI
UIS/PRCINP - PROCESS INPUT
MEMCMP
MEMSET

CALLED DIRECTLY BY:

UIS - USR INTERFACE SERVICES

USED IN MAIN PROGRAM(S):

MONITR/MAI - MAIN MODULE FOR MONITOR/UIS/FP PROCESS
FORM PROCESSOR Module Documentation

| NAME:   | UIS/STRTAP                  |
| PURPOSE: | START APPLICATION          |
| LANGUAGE: | C                           |
| MODULE TYPE: | SUBROUTINE                |
| FUNCTION TYPE: | VOID ()                  |
| SOURCE FILE: | UIS                        |
| SOURCE FILE TYPE: | .C                        |
| HOST:    |                             |
| SUBSYSTEM: | UI                        |
| SUBDIRECTORY: | FP                     |
| DOCUMENTATION GROUP: | FORMPROC            |

DESCRIPTION:

SYNOPSIS

STATIC VOID STRTAP(FUNCTN)
    STRUCT FUNCTN *FUNCTN;

INPUTS/OUTPUTS:

INPUTS:
    FUNCTN - INPUT DATA FROM THE FUNCTION SCREEN

OUTPUTS:
    NONE

DESCRIPTION

THIS MODULE STARTS UP AN APPLICATION AFTER MAKING SURE USER ALLOWED TO RUN IT. IT ALSO CALLS MAKAP TO CREATE THE DATA STRUCTURE FOR THE APPLICATION AND STRTPD TO START THE PHYSICAL DEVICE IF SPECIFIED

ARGUMENTS:

     FUNCTN = STRUCT FUNCTN *

INCLUDE FILES:

3-328
STDTYP - STANDARD TYPE DEFINITIONS
FPD - FORM PROCESSOR DATA
FPPARM - FORM PROCESSOR PARAMETERS
FPCODE - FORM PROCESSOR RETURN CODES
CTLCHR - CONTROL CHARACTERS
DBASEI - DATABASE INTERFACE
NTM - NTM INTERFACE INCLUDE FILE
UISFM - UIS FORM

ROUTINES CALLED:
--------------
SYSMSHG - SYSTEM MESSAGE ROUTINE
SIGABT
MAKAP - MAKE APPLICATION STRUCTURE
ISEND
RMVPD - REMOVE PHYSICAL DEVICE DATA STRUCTURE
PMSGSL - PUT MESSAGE LINE STRING
PRINTF
FFBCA
DBCOM
STRLEN
ESCPY - EXTERNAL STRING COPY
DBGAPD
UIS/STRTPD - START PHYSICAL DEVICE
PMSGLC - PUT MESSAGE LINE CODE
DBCFNC - CHECK FUNCTION
MEMCMP

CALLED DIRECTLY BY:
----------
UIS - USR INTERFACE SERVICES

USED IN MAIN PROGRAM(S):
-----------------------
MONITR/MAI - MAIN MODULE FOR MONITOR/UIS/FP PROCESS
FORM PROCESSOR Module Documentation

NAME: UIS/STRTPD
PURPOSE: START PHYSICAL DEVICE
LANGUAGE: C
MODULE TYPE: FUNCTION
FUNCTION TYPE: PD * ()
SOURCE FILE: UIS
SOURCE FILE TYPE: .C
HOST: SUBSYSTEM: UI
SUBDIRECTORY: FP
DOCUMENTATION GROUP: FORMPROC

DESCRIPTION: 

SYNOPSIS

STATIC PD *STRTPD(DEVICE, DEVTYP)
ENAME DEVICE;
ENAME DEVTYP;

INPUTS/OUTPUTS:

INPUTS:
DEVICE - NAME OF ACTUAL PHYSICAL DEVICE
DEVTYP - NAME OF DEVICE DRIVER

OUTPUTS:
RETURNS POINTER TO (NEW OR CURRENT) PHYSICAL DEVICE OR NULL IF FAILED

DESCRIPTION
THIS MODULE STARTS UP AN PHYSICAL DEVICE AFTER MAKPD TO CREATE THE DATA STRUCTURE FOR THE DEVICE.

ARGUMENTS:

DEVICE = ENAME
DEVTYP = ENAME

INCLUDE FILES:

3-330
STDTYP - STANDARD TYPE DEFINITIONS
FPD - FORM PROCESSOR DATA
FPARM - FORM PROCESSOR PARAMETERS
FCODE - FORM PROCESSOR RETURN CODES
CTLCHR - CONTROL CHARACTERS
DBASEI - DATABASE INTERFACE
NTM - NTM INTERFACE INCLUDE FILE
UISFM - UIS FORM

ROUTINES CALLED:

SYMSMG - SYSTEM MESSAGE ROUTINE
SIGABT
MAKE - MAKE PHYSICAL DEVICE STRUCTURE
ISEND
FFBCA
STRLEN
FCLOSE
OPEN
PMSGLS - PUT MESSAGE LINE STRING
SPRINTF
FREE
FSEARCH
STRCMP
ESCPY - EXTERNAL STRING COPY
MEMCMP

CALLED DIRECTLY BY:

UIS/STRTAP - START APPLICATION
UIS/PRCINP - PROCESS INPUT

USED IN MAIN PROGRAM(S):

MONITR/MAI - MAIN MODULE FOR MONITOR/UIS/FP PROCESS

3-331
FORM PROCESSOR Module Documentation

NAME: ULKFPD
PURPOSE: UNLINKK FPD
LANGUAGE: C
MODULE TYPE: SUBROUTINE
FUNCTION TYPE: VOID ()
SOURCE FILE: ULKFPD
SOURCE FILE TYPE: .C
HOST: SUBSYSTEM: UI
SUBDIRECTORY: FP
DOCUMENTATION GROUP: FORMPROC

DESCRIPTION:

SYNOPSIS
VOID ULKFPD(FPD PTR)
    FPD *FPDPTR;

INPUTS/OUTPUTS:

INPUTS:
    FPD PTR - FPD STRUCTURE IS TO BE UNLINKED

OUTPUTS:
    NONE

DESCRIPTION
    THIS MODULE UNLINKS FPD STRUCTURE FROM PD STRUCTURE

ARGUMENTS:

FPDPTR = FPD *

INCLUDE FILES:

STDTYP - STANDARD TYPE DEFINITIONS
FPD - FORM PROCESSOR DATA

CALLED DIRECTLY BY:
UIS/PRCINP - PROCESS INPUT

USED IN MAIN PROGRAM(S):

MONITR/MAI - MAIN MODULE FOR MONITOR/UIS/FP PROCESS
3.10.9  Include File Descriptions

The following list contains a purpose and description of each include file listed in 3.10.4 as specified in the source code. The language it is written in is also given.
FORM PROCESSOR Include File Description

FILE NAME: BITS
PURPOSE: INCLUDE FILE FOR BIT MANIPULATION ROUTINES
LANGUAGE: C

DESCRIPTION:
-----------
FORM PROCESSOR Include File Description

FILE NAME: CICODE
PURPOSE: Command Interpreter CODEs
LANGUAGE: VAX-ll COBOL

DESCRIPTION:

IDENTIFICATION: CICODE

DESCRIPTION:
THESE ARE COMMAND INTERPRETER CODES.

INFORMATION:
TYPE: (C-COBOL, IC-COBOL COPY) IC
SUBSYSTEM: UI-CI
CONFIGURATION ITEM ID:

DESIGNED BY: S. L. BARKER
START DATE: 1/18/83
FINISH DATE: 1/18/83

PROGRAMMED BY: S. L. BARKER
START DATE: 1/18/83
FINISH DATE: 1/18/83

UPDATED 8/24/83 TO COMBINE WITH UICODE.INC
UPDATED 8/25/83 TO ACCOMMODATE NEW MESSAGE LINE CODE
FILE NAME: CTLCHR
PURPOSE: CONTROL CHARACTERS
LANGUAGE: C

DESCRIPTION:
---------------

DESCRIPTION
DEFINITIONS OF ALL CONTROL CHARACTERS TO AVOID CHARACTER
SET
DEPENDENCIES.
FORM PROCESSOR Include File Description

FILE NAME: CURSORI
PURPOSE: CURSOR description
LANGUAGE: VAX-11 COBOL

DESCRIPTION:

IDENTIFICATION: CURSOR

DESCRIPTION:
THIS IS THE ORACLE CURSOR DESCRIPTION.

INFORMATION:
TYPE: (C-COBOL, IC-COBOL COPY) IC
SUBSYSTEM: UI
CONFIGURATION ITEM ID:

DESIGNED BY: S. L. BARKER
FORM PROCESSOR Include File Description

FILE NAME: DBASEI
PURPOSE: DATABASE INTERFACE
LANGUAGE: C

DESCRIPTION:

DESCRIPTION
INCLUDE FILE FOR DATABASE INTERFACE CALLS
FORM PROCESSOR Include File Description

FILE NAME: FFFV2
PURPOSE: FORM FILE FORMAT - VERSION 2
LANGUAGE: C

DESCRIPTION:

DESCRIPTION
RECORD LAYOUTS FOR THE BINARY FORM DEFINITION FILE
FORM PROCESSOR Include File Description

FILE NAME: FPCODE
PURPOSE: FORM PROCESSOR RETURN CODES
LANGUAGE: C

DESCRIPTION:

-------------

3-341
FORM PROCESSOR Include File Description

FILE NAME: FPD
PURPOSE: FORM PROCESSOR DATA
LANGUAGE: C

DESCRIPTION:

DESCRIPTION
DATA DEFINITIONS FOR ALL FORM PROCESSOR (INCLUDING
MONITER)DATA.
FORM PROCESSOR Include File Description

FILE NAME: FPDINI
PURPOSE: FPD INITIALIZATION
LANGUAGE: C

DESCRIPTION:

DESCRIPTION

INITIALIZED VERSION OF UID FOR INCLUSION IN MAIN PROGRAM.
FORM PROCESSOR Include File Description

FILE NAME: FPEMSG
PURPOSE: FORM PROCESSOR ERROR MESSAGES
LANGUAGE: C

DESCRIPTION:

-----------------------

DESCRIPTION
FORM PROCESSOR Include File Description

FILE NAME: FPPARM
PURPOSE: FORM PROCESSOR PARAMETERS
LANGUAGE: C

DESCRIPTION:

DESCRIPTION: THESE DATA DEFINITIONS ARE USED IN THE FORM PROCESSOR ROUTINES.
FORM PROCESSOR Include File Description

FILE NAME: FUNCTS
PURPOSE: FUNCTION DEFINITIONS
LANGUAGE: C

DESCRIPTION:

DESCRIPTION
DEFINES THE MNEMONIC VIRTUAL TERMINAL COMMAND FUNCTIONS.
AND DEFINES STRUCTURE FOR PARSING VTI MESSAGE BUFFER.
FORM PROCESSOR Include File Description

FILE NAME: NTM
PURPOSE: NTM INTERFACE INCLUDE FILE
LANGUAGE: C

DESCRIPTION:

DESCRIPTION
INCLUDE FILE FOR NTM INTERFACE
FILE NAME: ORACLE
PURPOSE: data declarations for programs that access ORACLE
LANGUAGE: VAX-11 COBOL

DESCRIPTION:

These are data declarations that are commonly used in programs that access ORACLE.

INFORMATION:
TYPE: (C-COBOL, IC-COBOL COPY) IC
SUBSYSTEM: UI
CONFIGURATION ITEM ID:

DESIGNED BY: S. L. BARKER
START DATE: 1/17/83
FINISH DATE: 1/17/83

PROGRAMMED BY: S. L. BARKER
START DATE: 1/17/83
FINISH DATE: 1/24/83
FORM PROCESSOR Include File Description

FILE NAME: ORCODE
PURPOSE: ORacle CODEs
LANGUAGE: VAX-11 COBOL

DESCRIPTION:
FORM PROCESSOR Include File Description

FILE NAME: STDTYP
PURPOSE: STANDARD TYPE DEFINITIONS
LANGUAGE: C

DESCRIPTION:

THIS FILE ENSURES THAT THE FOLLOWING STANDARD TYPES ARE AVAILABLE:

- FLOAT - SINGLE PRECISION FLOAT
- DOUBLE - DOUBLE PRECISION FLOAT
- LONG - 32 BIT (OR LARGER) SIGNED INTEGER
- LBITS - 32 BITS (OR MORE) FOR BIT MANIPULATION
- INT - NATURAL SIZE SIGNED INTEGER
- UNSIGNED - NATURAL SIZE UNSIGNED INTEGER
- BOOL - NATURAL SIZE LOGICAL (ZERO / NON-ZERO ONLY)
- SHORT - 16 BIT (OR LARGER) SIGNED INTEGER
- USHORT - 16 BIT (OR LARGER) UNSIGNED INTEGER
- BITS - 16 BITS (OR MORE) FOR BIT MANIPULATION
- CHAR - SINGLE MACHINE CHARACTER (REAL CHARACTERS ALWAYS POSITIVE)
- TINY - 8 BIT (OR LARGER) SIGNED INTEGER
- UTINY - 8 BIT (OR LARGER) UNSIGNED INTEGER
- TBITS - 8 BITS (OR MORE) FOR BIT MANIPULATION
- TBOOL - 8 BIT (OR LARGER) LOGICAL (ZERO / NON-ZERO ONLY)
- METACHAR - 16 BIT (OR LARGER) AUGMENTED CHARACTER (SIGNED)
- VOID - FUNCTION THAT RETURNS NO VALUE
- FORTRAN - STORAGE CLASS FOR FOREIGN (NON-C) ROUTINES OR C ROUTINES WHICH ARE CALLABLE FROM FOREIGN ROUTINES

SINCE NOT ALL COMPILERS SUPPORT USHRT, TINY, AND UTINY, THE FUNCTIONS
USHORT(), TINY(), AND UTINY() SHOULD BE USED WHENEVER REFERENCING THEM.

IN ADDITION, THE FOLLOWING UTILITY MACROS ARE DEFINED:

LURSHIFT(N, B) - UNSIGNED LONG RIGHT SHIFT
MAX(A, B) - MAXIMUM OF A AND B
MIN(A, B) - MINIMUM OF A AND B
FORM PROCESSOR Include File Description

ABS(A) - ABSOLUTE VALUE OF A
STRASN(A, B) - TRANSPORTABLE A = B FOR STRUCTURES
NULL - NULL POINTER VALUE (0)
TRUE - 1
FALSE - 0
SUCCESS - EXIT(SUCCESS) INDICATES SUCCESSFUL COMPLETION
FAILURE - EXIT(FAILURE) INDICATES ERRORS

THE FOLLOWING SYMBOLS SHOULD BE DEFINED BASED ON THE COMPIILER BEING USED:
USHORT - COMPILER SUPPORTS UNSIGNED SHORT
TINY - COMPILER TREATS CHAR AS SIGNED
UTINY - CHAR IS SIGNED AND COMPILER SUPPORTS UNSIGNED CHAR
VOID - COMPILER SUPPORTS VOID
FORTRAN - COMPILER SUPPORTS FORTRAN
STRASN - DEFINE APPROPRIATE MACRO
SUCCESS - DEFINE APPROPRIATE VALUE IF NOT 0
FAILURE - DEFINE APPROPRIATE VALUE IF NOT 1
FORM PROCESSOR Include File Description

FILE NAME: UISFM
PURPOSE: UIS FORM
LANGUAGE: C

DESCRIPTION:

-------------

3-353
FORM PROCESSOR Include File Description

FILE NAME: VTICOM
PURPOSE: VTI COMMUNICATION DEFINITIONS
LANGUAGE: C

DESCRIPTION:

-----------------

DESCRIPTION
3.10.10 Hierarchy Chart

The following hierarchy charts show the relationships between all of the modules mentioned in the above documentation. A module may call a subroutine several times within its code, but the call will only be shown once as a single relationship on this hierarchy chart. All modules shown at the top of the first page are considered Main Programs as described in section 3.10.1 above.

There is an internal paging scheme as marked by the numbers in the upper right corner of each page. An index after the last page of the chart shows where a routine and its calls are first defined. If a routine has no page reference, it either makes no calls or is an external routine. A continuation box on the end of a tree limb shows where that the tree continues on the page numbered mentioned. A number in a box with a routine name points to the page where the routine is further defined within the hierarchy tree. If there is no number in a box, the routine either makes no calls or is an external routine.
PS 620144200
1 November 1985

<table>
<thead>
<tr>
<th>MONITR/MAIN</th>
<th>PRNDSP</th>
<th>PRNOPN</th>
<th>PRNUID</th>
<th>PRNUSR</th>
<th>ADJSTR</th>
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</table>

3-356
PS 620144200
1 November 1985

+----+
 | UIS |
 +----+

+----------+
 | OPNFRM | MEMCMP | UIS/PRCWND | UIS/FLWNST |
 +----------+

+---9+ +----10+ +----11+ +----12+
1985

19

---

PS 620144200
1 November 1985

3-374
MONITR/MAIN

(CONT)

STRCMP

GVTICMD

MAX

ONWISC

(CONT)

15

--45

--46

3-382
PS 620144200
1 November 1985

40

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3-395
ONWISC

ESCPY | PTHPTR | OISCR/SETWIN | OISCR/RSTINP | (CONT)

-2  -62  -63  -64

OISCR/SETWIN

-45
PS 620144200
1 November 1985
PS 620144200
1 November 1985

53

+--------+
|  MAKAP  |
+--------+

+--------+
|        |
+--------+

+--------+ +--------+ +--------+ +--------+ +--------+ +--------+ +--------+ +--------+
| (CONT) | | STUP FP | | RMVAP | | MAKFPD | | CFREE |
+--------+ +--------+ +--------+ +--------+ +--------+ +--------+

3-408
PS 620144200
1 November 1985

---+---
| UIS |
---+---

---+---+---+---+---+---+---
| IONWISC | SYMSG | TRMUSR | OUTSCR | (CONT) |
---+---+---+---+---+---+---

---+---+---+---+---+---+---
| 35 | 45 | 65 | 15 | 46 | 76 |
PS 620144200
1 November 1985

+---------------------+
| FNDMSG/CODSCH |
+---------------------+

+-------+
| IMEMCPY |
+-------+

+-------+
| IFREAD |
+-------+

+-------+
| IREWIND |
+-------+

3-422
PS 620144200
1 November 1985

69

+-------------------+
| OPNFRM/BRPNOD |
+-------------------+

| (CONT) | MALLOC | FREAD |
+--------+--------+-------+

3-424
PS 620144200
1 November 1985

73

+------------+
 | OPNFRM/PFREC |
 +------------+

+---+------+
 | I I I I I |
 +--+----+
 | I | I |
 +--+---+
 | I I |
 +--+--+
 | I |
 +-----+

I(CONT) IMAKFD I GATDEF | STRCMPl | ESCPY | I (CONT) |
+----+ 50+ +----+ 26+ +----+ 82+ +--------+ +----+ 2+ +----+ 86+
PS 620144200
1 November 1985

78

+--------+
|ADDELH |
+--------+

+--------+ +--------+ +--------+ +--------+ +--------+ +--------+
| ESCPY | | PTHPTR | | MEMCPY | | ABS | | SYMSG | | (CONT) |
+--------2+ +-------62+ +--------+ +--------+ +-------65+ +-------92+
PS 620144200
1 November 1985

+----------+
| OPNFRM/PARY |
+----------+
+----------+
| I |
+----------+

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</table>

3-440
PS 620144200
1 November 1985

```
+--------+
| PMSGLS |
+--------+

+--------+ +--------+ +--------+ +--------+ +--------+
| MALLOC | FUISW | ESCPY | STRLEN | MEMSET | ISPRINT |
+--------+ +--------+ +--------+ +--------+ +--------+

3-443
PS 620144200
1 November 1985

89

IESCPY
IPTHPTR
IGDATA/GETBUF
ISYSMSG
IMEMCPY

+-+--- 62+ +---- 65+ +--65+

|---+---

|---+---

|---+---

3-444
PS 620144200
1 November 1985

96

+(+---+---+)
|OISCR/PROCWIN|
+(+---+---+)    

|------------------|
|((CONT)) IPRINTF IOISCR/PROCWIN IABS I

+---+---+---+---+---+---+

+---+---+---+---+---+

+---+---+---+---+---+

+(+---+---+---+---+---+)

3-451
PS 620144200
1 November 1985

98

+----------+
| MONITR/MAIN |
+----------+

+-----------------------+
| ((CONT)) | FTELL | FPRINTF | MEMCPY | FWRITE | ((CONT)) |
+----------+-------+---------+--------+--------+---------+
| ++--84+ | +-----+ | +-------+ | +------+ | +-------+ | ++-111+ |

3-453
PS 620144200
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[Diagram with symbols and numbers]

3-456
RSVE XP/BLDEXP
IFREE IRSVE XP/BLDEXP ISDIGIT STRCHR (CONT)
IOISCR/PROCFLD

I

(CONT) IOISCR/PROCFLD !ABS! !MIN! [(CONT)]

+-95+ +-------------95+ +--+- +--+- +--+-121+
PS 620144200
1 November 1985

116

I RSVEXP/BLDEXP I
+--------+

I (CONT) I PTHPTR I SYMSG I MALLOC I
+-+---+ +--+---+ +--+---+ +--+---+
+---103+ +----62+ +----65+ +--------+
PS 620144200
1 November 1985

120

+---------+
|OISCR/DSPSCR|
+---------+


+---------+ +---------+ +---------+ +---------+ +---------+
|OISCR/CMPALL| PDATA| SPRINTF| LOCALTIME| TIME|
+---------+ +---------+ +---------+ +---------+ +---------+

+---------+
|IOISCR/CMPALL| CMPFLD|
+---------+ +---------+

+---------+ +---------+
|OISCR/CMPALL| CMPFLD|
+---------+ +---------+

+---------+ +---------+
|OISCR/CMPALL| CMPFLD|
+---------+ +---------+

3-475
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</table>

```
+-------------------+
| OISCR/PROCFLD     |
+-------------------+

+-------------------+ +-------------------+ +-------------------+ +-------------------+ +-------------------+ +-------------------+ +-------------------+
| (CONT)            | OISCR/ADDCMD     | SYMSG              | PDVOTP             | (CONT)              |
|                  +-------------------+-------------------+-------------------+-------------------+-------------------+-------------------+-------------------+
| ++109+            | +-------------------+108+ | ++65+              | ++35+              | ++130+              |
```

3-476
PS 620144200
1 November 1985

125

\[ \text{OPMFRM/PITM} \]

\[ \text{--- --- ---} \]

\[ \text{(CONT)} \]  \[ \text{MAKFLD} \]  \[ \text{GATDEF} \]  \[ \text{ESCPY} \]

\[ \text{--- 113} \]  \[ \text{--- 26} \]  \[ \text{--- 82} \]  \[ \text{--- 2} \]
PS 620144200
1 November 1985

+--------+
| OISCR/EVTBUF |
+--------+

+------------------ ----------- +
| I I I II          |
| -- | --- |   |
| +---+---+---+    |
| +--+---+--+    |
| +--+---+    |

131

+---122+ +-------+ +--97+ +------+-138+

3-486
PS 620144200
1 November 1985

133

+--------------------+
| MONITR/MAIN       |
+--------------------+

+--+--------+---+
+--+---+

| (CONT) | DBCLSE | DBOPEN |
+--------+--------+--------+

+----+----+----+
+----+----+----+

+----+----+----+

+----+----+----+

+----+----+----+

+----+----+----+

+----+----+----+
PS 620144200
1 November 1985

139

+--------+
| GETCUR |
+--------+

| (CONT) | MEMSET | FREE | SYMSG | MEMCPY | CURPOS |
+--------+--------+-------+--------+--------+--------+
| 136    | -------| ------| ------ | ------ | -------|

3-494
<table>
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<th>MATO10</th>
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3.11 Program Listings Comments

This information is contained in the Module Descriptions in section 3.10.
SECTION 4
QUALITY ASSURANCE PROVISIONS

4.1 Introduction and Definitions

"Testing" is a systematic process that may be preplanned and explicitly stated. Test techniques and procedures may be defined in advance, and a sequence of test steps may be specified. "Debugging" is the process of isolation and correction of the cause of an error.

"Antibugging" is defined as the philosophy of writing programs in such a way as to make bugs less likely to occur and when they do occur, to make them more noticeable to the programmer and the user. In other words, as much error checking as is practical and possible in each routine should be performed.

4.2 Computer Programming Test and Evaluation

The quality assurance provisions for test consists of the normal testing techniques that are accomplished during the construction process. They consist of design and code walk-throughs, unit testing, and integration testing. These tests are performed by the design team. Structured design, design walk-through and the incorporation of "antibugging" facilitate this testing by exposing and addressing problem areas before they become coded "bugs."
END
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