

PACKAGE ID - 000830MLTPL01 XDAMP2.102

KWIC TITLE - Experimental Time-Dependent Data Analysis,
Manipulation, Visualization GUI

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LIMITATION CODE -COPY **AUDIENCE CODE** - LIM

COMPLETION DATE - 12/01/1996 **PUBLICATION DATE** - 04/01/1995

DESCRIPTION - XDAMP is a graphical user interface (GUI) designed to allow the user to manipulate two-dimensional waveforms (data vs. time) that typically are generated during transient response experiments. A typical single data set from these facilities may generate more than 100 time-dependent waveforms. XDAMP can manipulate waveforms both in time and in amplitude. Typical operations are: time shifting, truncating before or after a specific time, adding, multiplying, integrating, and averaging. The software automatically maintains an audit trail for operations performed on each waveform. Annotation can be added to the overall file so that the data set contains full documentation. PostScript printing graphics and annotation is supported. Data are saved using the Hierarchical Data Format (HDF) from the National Center for Supercomputing Applications.

PACKAGE CONTENTS - Media Directory; Software Abstract; SAND94-2391;
Media Includes Source Code, User's Guide, Auxiliary Material,
Sample Problem Input Data;

SOURCE CODE INCLUDED? - Yes

MEDIA QUANTITY - 1 3.5 Diskette

METHOD OF SOLUTION - XDAMP used the Interactive Data Language (IDL) from Research Systems, Inc. as the processing and graphic language. The entire program is written in the IDL macro language to enhance portability. Many of the mathematical operations use IDL-provided routines so that portability is maximized. IDL is currently supported on the Macintosh, DEC VMS computers, and virtually all UNIX platforms running X-windows.

COMPUTER - MLT-PLTFM

OPERATING SYSTEMS - Determined by IDL release. IDL must be at least version 4.0.1.

PROGRAMMING LANGUAGES - XDAMP is written entirely as a macro using the IDL Language to allow portability,

SOFTWARE LIMITATIONS - The main limitation is on the number and size of the waveforms allowed. This is system specific and the default

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SOFTWARE LIMITATIONS - (CONT) parameters are initialized in a system-specific subroutine that allows the system manager to easily modify the limits. The users can modify these limits but tend to be restricted by computer memory or swap space. Most additional limitations are due to IDL liscensing restrictions. there is no known limitation on the maximum length of data arrays.

SOURCE CODE AVAILABLE (Y/N) - Y

UNIQUE FEATURES - XDAMP can manipulate waveforms both in time and in amplitude. It automatically calculates the pulse parameters (maximum, minimum, full-width-at-half-maximum, rise-time, and fall-time) of the waveforms. Some advanced features included are: 1) the ability to compare waveforms in time and amplitude (thus generating calibration information), 2) the ability to generate high-frequency cable compensators, 3) integration, 4) differentiation, 5) Fourier transforms of waveforms, 6) a full set of digital filters, and 7) automatic execution of macros. Annotation is automatically added to each waveform as it is modified. Annotation can be added to the overall file so that the data contains full documentation. Audit trail information is automatically generated for each waveform. A complete log file of all operations is automatically generated to simplify the creation of new macros. Flexible printing to PostScript printers is supported. Data are saved using the Hierarchical Data Format (HDF) from the National Center for Supercomputing Applications. This format is highly compressed, self-encoded and easily transportable across the Internet.

RELATED SOFTWARE - XDAMP requires an IDL license and software, available from Research Systems, Inc., 2995 Wilderness Place, Suite 203, Boulder, CO 80301. On Macintosh computers, the shareware DropPs program is desirable to allow easy printing of the graphics files and StuffIt Deluxe allows easy unpacking of the UNIX tar file format used for distribution.

OTHER PROG/OPER SYS INFO - The following file naming conventions are used: *.pro for IDL procedures, *.cmn for IDL common blocks, *.hdf for hierarchical data format files, xdamp.out is the output file, xdamp.ss is a spreadhseet importable file automatically generated by some commands, manual.ps is the PostScript manual file included in the distribution, *dcf is a xdamp macro command file, ASCII data outut files have the default extension .asc. The distriibution contains an AAREADME.TXT file that explains where to install the software using the rar command and how to print out the manual.

HARDWARE REQS - Determined by IDL compatibility.

TIME REQUIREMENTS - XDAMP requires approximately 20 seconds to compile on most UNIX systems. On Macintoshes, up to 3 minutes may be required due to a bug in the IDL software search path.

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TIME REQUIREMENTS - (CONT)

REFERENCES - Ballard, W.P., XDAMP Version 2: An IDL -based Data Manipulation Program, SAND-96-2836, December 1996.

ABSTRACT STATUS - Released AS-IS 2/2/1999.

SUBJECT CLASS CODE - ON

KEYWORDS -

COMPUTER PROGRAM DOCUMENTATION
X CODES
CALIBRATION
DATA ANALYSIS
DATA PROCESSING
EXPERIMENTAL DATA
FOURIER TRANSFORMATION

EDB SUBJECT CATEGORIES -

990200

SPONSOR - DOE/DP

PACKAGE TYPE - AS - IS