

PACKAGE ID - 001189IBMPC00 WINR

KWIC TITLE - Fault Tree Reliability Analysis and
Design-for-reliability

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

COMPLETION DATE - 11/01/1996 **PUBLICATION DATE** - 11/01/1996

DESCRIPTION - WinR provides a fault tree analysis capability for performing systems reliability and design-for-reliability analyses. The package includes capabilities for sensitivity and uncertainty analysis, field failure data analysis, and optimization.

PACKAGE CONTENTS - Media Directory; Software Abstract; Media Includes Source Code, Text Library, User's Guide, Executable Module, Compilation Instructions, Linking Instructions, Sample Problem Input and Output;

SOURCE CODE INCLUDED? - Yes

MEDIA QUANTITY - 10 3.5 Diskettes

METHOD OF SOLUTION - Fault trees are solved in WinR using minimal cut sets. Sensitivity and uncertainty analysis use Latin Hypercube Sampling (LHS). Optimization capabilities are based on generic algorithms.

COMPUTER - IBM PC

OPERATING SYSTEMS - Windows 3.x and Windows 9.5

PROGRAMMING LANGUAGES - Visual Basic; Visual Basic 4.0.; FORTRAN

SOFTWARE LIMITATIONS - Fault tree analysis is limited to 1000 total events, 300 subsystem, and 150 primary events per subsystem. Optimization is limited to a maximum of 50 improvement option categories with up to 10 levels per category. These limitations are based on current code dimensions.

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SOURCE CODE AVAILABLE (Y/N) - Y

UNIQUE FEATURES - WinR is distinguished by its complete integration of fault tree editing, failure data management, and graphics output. WinR also includes unique utilities for processing field failure event data. Finally, the software integrates sensitivity and uncertainty analysis and stochastic optimization.

HARDWARE REQS - WinR operates on an IBM compatible PC running Windows 3x or Windows 95. The software requires about 20 MB space on the system hard drive and needs 16 MB memory for efficient operation.

TIME REQUIREMENTS - Fault tree analysis for small problems (e.g., 100 gates with minimal redundancy will require a few seconds to a minute for analysis. Large problems (e.g., problems with hundreds of gates high level redundancy can require minutes to tens of minutes or more for execution). Large stochastic optimization problems may require tens of minutes or even hours to run.

ABSTRACT STATUS - Submitted 8/8/97. Released AS-IS 10/30/97

SUBJECT CLASS CODE - Z

KEYWORDS -

COMPUTER PROGRAM DOCUMENTATION
W CODES
FAULT TREE ANALYSIS
RELIABILITY
OPTIMIZATION

EDB SUBJECT CATEGORIES -
990200

SPONSOR - DOE/DP

PACKAGE TYPE - AS - IS