

PACKAGE ID - 001141MLTPL00 EWES

KWIC TITLE - Early Warning Expert System for Equipment
Operability Surveillance

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

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

DESCRIPTION - EWES is an AI-based expert system for signal validation and sensor operability surveillance in industrial applications that require high-reliability, high-sensitivity annunciation of degraded sensors, discrepant signals, or the onset or incipience of system disturbances.

PACKAGE CONTENTS - Media Directory; Software Abstract; Media Includes Source Code;

SOURCE CODE INCLUDED? - Yes

MEDIA QUANTITY - 1 3.5 Diskette

METHOD OF SOLUTION - EWES automatically configures itself to simple or complex physical processes or industrial systems. A conditional branching hierarchy efficiently steps through logic trees (embodied in knowledge bases) to identify a minimum unique set of signal pairs needed for a network of interacting Sequential Probability Ratio Test (SPRT) modules.

COMPUTER - MLT-PLTFM

OPERATING SYSTEMS - DOS, UNIX, VMS, or AIX

PROGRAMMING LANGUAGES - C

SOURCE CODE AVAILABLE (Y/N) - Y

UNIQUE FEATURES - As a self-configuring expert system, EWES can be applied to complex systems involving one or more industrial devices deployed in parallel. Measurable parameters for each device may comprise multiple physical variables (e.g., temperature, vibration level, pressure), and each physical variable may be monitored by multiple redundant sensors. The system will automatically configure itself in the most efficient manner which

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UNIQUE FEATURES - (CONT) provides the minimum unique set of sensor pairs for surveillance.

RELATED SOFTWARE - Sequential Probability Ratio Test (SPRT) modules.

HARDWARE REQS - Any hardware configuration that can process ANSI compatible code.

TIME REQUIREMENTS - After a short initialization (or training) period, the system is designed to execute in real time.

ABSTRACT STATUS - Submitted 12/18/96. Released AS-IS 1/13/97

SUBJECT CLASS CODE - T

KEYWORDS -

COMPUTER PROGRAM DOCUMENTATION
ARTIFICIAL INTELLIGENCE
EXPERT SYSTEMS
E CODES
DATA ACQUISITION SYSTEMS
INDUSTRIAL PLANTS
MONITORING
SIGNALS
FAILURES
VALIDATION
ELECTRONIC EQUIPMENT
RELIABILITY
SENSITIVITY

EDB SUBJECT CATEGORIES -
990200 440800 426000

SPONSOR - DOE/NE

PACKAGE TYPE - AS - IS