

PACKAGE ID - 001140MLTPL00 MSET

KWIC TITLE - Multivariate State Estimation Technique

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

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

DESCRIPTION - MSET is a system that analyzes signals generated by an industrial plant or process. These signals are used to determine the current condition of an industrial process. Based upon a group of reference signals that is representative of a normal process, MSET can determine which signals, if any, are faulty or degraded. faulty signals are then replaced in real-time with a new, synthesized signal that more closely represents the true state of the system.

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

SOURCE CODE INCLUDED? - Yes

MEDIA QUANTITY - 1 3.5 Diskette

METHOD OF SOLUTION - The MSET system consists of two parts. First, a state analyzer is used to generate a virtual state signal. This virtual state is generated from the current system state and a set of reference states representative of normal system processes. The current system state and virtual system state are used as input into a Sequential Probability Ratio Test (SPRT) module. SPRT monitors and analyzes changes in statistical patterns between the true and virtual states. When the SPRT has gathered enough evidence that the current system state is corrupt, the current system signal may be automatically replaced with the virtual signal.

COMPUTER - MLT-PLTFM

OPERATING SYSTEMS - DOS, UNIX, VMS, AIX, Windows NT, Windows 95

PROGRAMMING LANGUAGES - C, C++

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SOURCE CODE AVAILABLE (Y/N) - Y

UNIQUE FEATURES - Signals found to be corrupt may be replaced in real-time with signals generated by MSET. This allows industrial processes to continue even when monitored sensors malfunction.

HARDWARE REQS - MSET is operable on any hardware system capable of running ANSI-standard C software.

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

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

SUBJECT CLASS CODE - T

KEYWORDS -

COMPUTER PROGRAM DOCUMENTATION
M CODES
SIGNALS
EXPERT SYSTEMS
ARTIFICIAL INTELLIGENCE
REAL TIME SYSTEMS
ON-LINE SYSTEMS
ELECTRONIC EQUIPMENT
MONITORING
INDUSTRIAL PLANTS

EDB SUBJECT CATEGORIES -

990200 440800 426000

SPONSOR - DOE/NE

PACKAGE TYPE - AS - IS