

**PACKAGE ID** - 001144MLTPL00 NEBSESS

**KWIC TITLE** - NEural Network Based System for Equipment  
Startup Surveillance

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

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

**DESCRIPTION** - NEBSESS is a system for equipment surveillance and fault detection which relies on a neural-network based means for diagnosing disturbances during startup and for automatically actuating the Sequential Probability Ratio Test (SPRT) as a signal validation means during steady-state operation.

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

**SOURCE CODE INCLUDED?** - Yes

**MEDIA QUANTITY** - 1 3.5 Diskette

**METHOD OF SOLUTION** - The observed dynamic behavior of the equipment is transformed into basis vector space where classification is performed using static neural networks.

**COMPUTER** - MLT-PLTFM

**OPERATING SYSTEMS** - DOS, UNIX or VMS, AIX

**PROGRAMMING LANGUAGES** - C

**SOURCE CODE AVAILABLE (Y/N)** - Y

**UNIQUE FEATURES** - Transformation into basis vector space greatly reduces the computational load during training. The transformation uses wavelet theory so that the network's stored images can be analytically shifted and dilated. This provides for optimal viewing of the input signal.

**RELATED SOFTWARE** - An auxiliary program may be used for plotting results.

**HARDWARE REQS** - Any hardware configuration that can run ANSI-compatible C code.

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

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**TIME REQUIREMENTS - (CONT)**

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

**SUBJECT CLASS CODE** - T

**KEYWORDS** -

COMPUTER PROGRAM DOCUMENTATION  
N CODES  
NEURAL NETWORKS  
EXPERT SYSTEMS  
ARTIFICIAL INTELLIGENCE  
VALIDATION  
SIGNALS  
PROBABILITY  
MONITORING  
FAILURES  
DETECTION  
START-UP

**EDB SUBJECT CATEGORIES** -

990200 440800 426000

**SPONSOR** - DOE/NE

**PACKAGE TYPE** - AS - IS