
**DEBUGGER: The Design of a Test Aid to Support
the Development of an Embedded Computer System**

Harvey Glass
University of South Florida
Tampa, FL

ABSTRACT

The paper describes the design of a Forth-based debugging aid that has proven useful in the development of a sophisticated real-time microprocessor based controller. The controller provides an interface between a militarized intelligent terminal and 1) an auxiliary bubble memory, and 2) a local area network. The computer programs supporting the controller operate in an interrupt driven multi-tasking environment. The test support facility was implemented to assist in identifying and correcting programming errors in the controller software. We will discuss our experiences in the design of this tool and how it provides a programmer with a means of gaining visibility into the product under development.

Exception Handling in Forth

Clifton Guy and Terry Rayburn
Bremson Data Systems, Inc.
Lenexa, KS

ABSTRACT

Forth relies on the discipline of the programmer to provide the benefits of structured languages: readability, predictability and modularity. A difficult class of problem for structured software is the handling of exceptions to the control flow, including errors. Even in properly designed software, a low level module may detect a condition whose proper resolution resides on a higher level. We describe a general implementation for exception handling in Forth that hides the inherent structure violation within a readable control structure which allows return from any nesting depth of Forth words and control structures. Further, this structure is itself nestable to any arbitrary depth.

*This paper has been submitted for publication to the **Journal of Forth Application and Research**.

