Objective

Little has been done towards handling embedded system errors. Consequently, these systems do not even detect them.

How can software know which of these faults cause errors? Can a system recover without a program crashing or system aborting?

Hardware Features

- Opto and mechanical sensors to detect trains' position
- Pulse width modulator on 68HC12 used to vary train speed
- Train speed measured using controller's timer and opto-to-opto time/distance
- Multiple digital I/O ports for lights, LEDs, 7-segment displays, opto & mechanical sensors
- Analog to Digital Converter on 68HC12 receives input from thermistor and linear potentiometer
- User Interface through potentiometer, switches and LED displays

Motorola 68HC12 Architectural Decomposition

Control Flow Diagram for Train Control

Sponsors: University of Maryland Institute for Advanced Computer Studies, A.J. Clark School of Engineering