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(54) **APPARATUS FOR DEVELOPING EMBEDDED SOFTWARE AND A PROCESS FOR MAKING THE SAME**

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USPC **717/100**; 717/102; 717/105; 717/124;
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(58) **Field of Classification Search**
None
See application file for complete search history.

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(57) **ABSTRACT**

An apparatus used as a platform for developing embedded real-time software for controlling fault tolerant opto-electro-mechanical systems. The platform provides a portable model-based design environment conducive to validation and verification of the Control Laws and of the Plant model. The platform is also useful for observing the overall system behavior by injecting faults or failures which can be destructive, expensive or difficult if applied to the real system. The platform is comprised of multiplicities of serial data ports, serial port converters, single board microcontrollers, and external interfaces. The apparatus includes at least one interface board that cross connects at least two microcontrollers and allows the downloading of the Plant and Control algorithms to each microcontroller through available serial interfaces enabling evaluation of the modeled system behavior. The apparatus includes an embedded software development tool-chain facilitating an order of magnitude increase in embedded software development productivity.

3 Claims, 10 Drawing Sheets

