



Active Noise Control for Smart Materials

Abstract

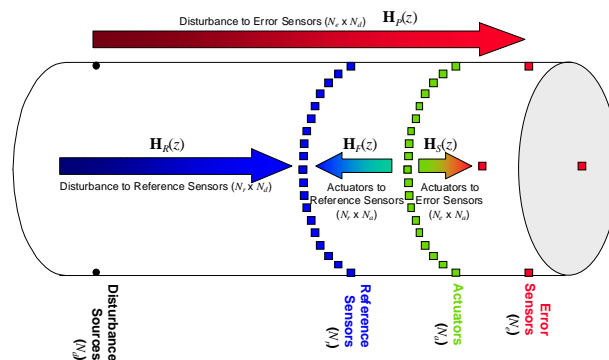
SSC is developing a real-time active noise control system for use in smart materials applications. The architecture uses low cost digital signal processors that are integrated directly into a smart material. These computers enable a truly intelligent material that reacts to external stimuli and can adapt the materials' response to changing environmental conditions.

The computers are arranged in a hierarchical and distributed architecture that mimics the way biological systems achieve complex adaptive control of body movement.

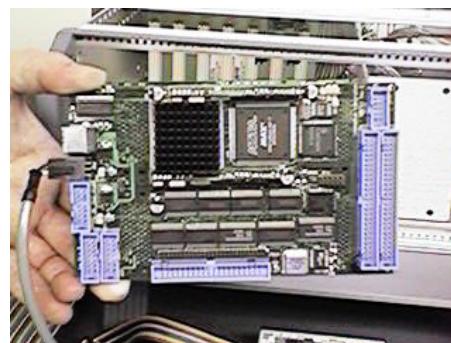
The military application of this technology is acoustic noise reduction for underwater vehicles.

Controller for Smart Skins Demonstration Objectives

- Demonstrate reduced acoustic noise in underwater vehicles using smart skin technology in 2000
- Reduce controller cost of a smart skin
- Reduce thickness of the smart skin



Active Noise Control CAD Tool that integrates with Mechanical Finite Element Packages



Real-time DSP Active Noise Controller with New Multichannel Adaptive Feedforward Control Algorithms

Commercialization

- Vehicle Signature Control
- Acoustic Sensor Noise and Interference Reduction

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