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CILIA

Customized Intelligent Life-Inspired Arrays

Integrated Project

Information Society Technologies
Future & Emerging Technologies
Proactive Initiative BIO-I3

DELIVERABLE: D1.4.1 – Executive Summary

**OPTIMISATION OF MEMS BASED
ADAPTIVE HAIR-SENSORS**

Actual submission date:	September 1 st , 2007		
Start day of project:	September 1st, 2005	Duration:	48 months
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EXECUTIVE SUMMARY

In this report we describe the analysis of hair-sensors for operation in air. We use developed models and experimental results on fabricated devices to establish an extensive understanding of the functioning and possible optimisation of the sensors. Using the developed insights we conclude that the best sensor performance can not be attained by an evolutionary change of existing fabrication technology but that an entire new technology is required. Using this new generation of sensors we expect to arrive at flow sensitivities that are up to 37 times larger than previous sensors and mechanical responses (tilt-angles) up to about 20% of what has been observed for crickets. Since the new devices call for an entire new technology their fabrication and characterisation will be described in a separate deliverable report (D1.4.6).