

REQUEST FOR CONCEPTS - INTERACTIVE CHILD'S TOY

OPPORTUNITY

AME470 Inc. is considering developing a wholly-owned subsidiary that will design and manufacture a specialized class of children's toys. This results from a realization that low-cost and robust embedded micro-controllers may allow for the development of a new type of toy. The development of a new toy for the Christmas-season 2002 will be its first foray into this competitive marketplace. The intent is to eventually develop a line of toys that are "electro-mechanical" in nature and are recognized as being educational and intellectually stimulating because they are truly interactive. The goal of the current project is to develop a number of concept toys and demonstrate their feasibility. The only limitation at this point is a requirement that the suggested retail price for these products should not exceed \$99.

This product concept development project will involve the concept definition, concept engineering design studies, documentation and proof-of-concept prototype fabrication.

PROJECT REQUIREMENTS: Each design team must:

1. Develop the conceptual design for product and document the design in the form of a detailed engineering feasibility study(proposal). The design must be based upon sound engineering modeling, analysis and simulation. The proposal should include engineering justification for the product and address issues related to manufacturing and assembly. The results of this concept development project must be presented in a Design Review.
2. Fabricate a "proof-of-concept" prototype for the proposed concept. The prototype should be capable of demonstrating the basic interactive capabilities of the product. The prototype will also be used to demonstrate selected features of the assembly, operation, and packaging of the proposed product.
3. Follow established procedures for collecting and reporting time spent on the project, maintain and return all issued equipment, follow safety guidelines and submit cost accounting records for the entire project.

SPECIAL CONSIDERATIONS FOR THE PROOF-OF-CONCEPT PROTOTYPE

The proof-of-concept demonstration should satisfy the following:

1. Total design project costs cannot exceed \$400. - The total cost includes the \$300 provided by ME470, Inc. and up to \$100 that can be collected from the design team. The total cost includes all out-sourced parts, raw materials, tools, administrative costs (copying, viewgraphs, etc.) and supplies (glue, wire, etc.). All administrative cost must be covered by the team's contribution.
2. Component parts can be either fabricated in-house or purchased from outside vendors (out-sourced). All out-sourced parts must be accounted for in the overall cost at their full retail value. Groups cannot "out-source" fabrication processes without expressed written approval of management.
3. All "in-house" parts must be fabricated by the design team using the facilities provided in B19, Fitzpatrick Hall or by special arrangement, and written approval of management, groups may use other University facilities such as the rapid prototyping CAM equipment .
4. The completed prototype and all "scrap" materials are the property of the AME department.
5. No steel or any other metal "harder" than aluminum can be used on the prototype without explicit written approval of the management team.
6. Issues related to product safety and durability must be considered and demonstrated.