

ECODESIGN TOOLBOX FOR THE DEVELOPMENT OF GREEN PRODUCT CONCEPTS – CASE STUDY DIGITAL VOICE RECORDER

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ABSTRACT

The paper describes a recently finished research project called “ECODESIGN Toolbox for Green Product Concepts” in short “ECODESIGN Toolbox”. This project aimed at developing a systematic approach for sustainable product design as well as innovative product concepts in cooperation with partners from the industry e. g. Philips Dictation Systems Austria. The approach developed in the project as well as preliminary results gained so far will be demonstrated on a digital voice recorder, which was launched on the market in March 2007.

Keywords: Ecodesign tools, implementing Ecodesign, product improvement, sustainable product design

1 INTRODUCTION

This paper describes the results of a project carried out at the Institute for Engineering Design of the Vienna University of Technology. The project aims at developing a systematic approach for sustainable product design and is called “ECODESIGN Toolbox for Green Product Concepts”. With application of the systematic approach innovative product concepts have been developed during this project in cooperation with partners from industry. The method is implemented on three different products: a digital voice recorder, a golf swing analyzer and an injection moulding machine.

In the paper the procedure and the results of the case study “digital voice recorder” in form of a Green Product Concept will be introduced. This project was funded by the Federal Ministry of Transport, Innovation and Technology and the Austrian Research Promotion Agency (Project number: 810777).

Research questions answered in the project:

1. How to environmentally describe a product as complete and easy as possible? Which technical parameters (e.g. weight and used energy) have to be considered?
2. How to quantify environmental impacts of a product in a practical way?
3. How to consider stakeholder requirements (e.g. from environmental legislation) systematically?
4. How to record, analyse and assess production processes and how to derive improvements out of this analysis?
5. How to derive improvement strategies from process, product and stakeholder requirements?
6. How to assess process, product and stakeholder improvement ideas and how to combine them to a Green Product Concept?