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Consideration of environmental impacts in the cable design

BRIX S., Alcatel Kabel, Nürnberg, Germany
DUBOTS P., NOËL B., PARASIE Y., Alcatel, France

1.Résumé

Les restrictions environnementales doivent être intégrées dans la procédure de conception existante; ceci signifie qu'elles doivent être prises en considération par des non-experts en questions environnementales – les designers. Voilà comment est apparue la demande d'un outil pouvant aider les designers à développer des produits avec un moindre impact sur l'environnement, et comment le logiciel "Environmental Impact and Management Explorer" (EIME) a été développé. L'EIME permet au designer de lui faciliter la fabrication de tout son produit et de recevoir une Analyse de Cycle de Vie du produit en quelques minutes. Puis, les indicateurs d'impact calculés peuvent être comparés à d'autres produits, ou à des directives pertinentes en matière d'environnement. Si nécessaire, le produit peut être amélioré immédiatement.

1. Abstract

Environmental restrictions have to be integrated in the existing design procedure, that means they must be taken into account by non-experts in environmental issues – the designers. This is the way how the demand for a tool, which can help designers to develop products with a lower impact on the environment, arose and how the "Environmental Impact and Management Explorer" (EIME) was developed. EIME enables the designer in an easy way, to construct his complete product and to receive an LCA (Life Cycle Assessment) of the product within a few minutes. Then the calculated impact indicators can be compared with other products or special environmentally relevant guidelines and, if necessary, the product can be improved immediately.

2. Introduction

During the construction of cables and wires usually parameters like function, reliability and cost are taken into consideration to offer the customer the optimum product. In future, increasing importance will be attached to the consideration of environmental impacts of a product during its life cycle. This means to make use of natural resources as considerately as possible and to minimise the environmental impact during the manufacture and use of the product. Furthermore the end of life is to be taken into consideration as early as during the construction of the product to improve its recovery.

Alcatel considers it an obligation to take environmental aspects into special account for its products.

Faced with this challenge, and considering three years ago that none of the existing tools fitted with their needs, manufacturers from the FIEEC (*Fédération des Industries Electriques et Electroniques: French Federation of Electrical, Electronic and Communication Industries*) joined together to define a methodology aimed at helping designers to choose the best environmental solution for a given product, compatible with on-going technical and cost effective options defined during the design phase.

3. General presentation of the software

The Environmental Impact and Management Explorer was developed together with other companies from the electrical and electronics sector to fit the following characteristics:

- ✓ it addresses non-experts,
- ✓ it quantifies the environmental impacts of the product on its whole life cycle,
- ✓ it identifies the relevant weak points and it guides designers towards improvement solutions,
- ✓ it can be customised to take account of features of the product family, of the company's policy, of the market, ...
- ✓ it informs designers on relevant rules and standards,
- ✓ it is compatible with the wide multiplicity, variety and complexity of products of the Electric and