A Web-based System for Assessing and Searching for Designs

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Abstract

Users need to access design data for a variety of reasons. Designers may be interested in accessing repositories of IP blocks for possible inclusion in their own designs. Alternatively, EDA tool developers and purchasers need a representative set of designs to evaluate or benchmark software. This poster presents a web-based system used both for profiling designs and for searching for designs with specific characteristics. The STEED system summarised here is based on external information models that tailor it to user requirements.

1. Introduction

Users can use this web-based system in three different ways. It can be used to submit designs for analysis or to look for designs with specific characteristics. It also supports searching of the design repository. It has currently been set up to handle designs in VHDL or in EDIF. The novel characteristic of this system is the use it makes of information models to provide a generic and extensible way of supporting the overall functionality.

All designs 'understood' by the repository are profiled by analysis tools. These analyses ensure that users get data that matches their specified requirements. The analysis results can be used to provide designers with feedback on the characteristics of their own designs or simply to enable users to select designs with specific characteristics.

2. Use of Information Models

An information model is a way of formally capturing the characteristics of a specific domain. In this case, the information model is written in EXPRESS [1] and describes characteristics of electronic designs. The current model considers four major kinds of characteristics: general, structural, behavioural and board layout.

In addition to being used to drive the analysis and search tools (see Figure 1), the model is used to tailor the interface that the user sees. Because an external model controls both analyses and searching, enhancing the EXPRESS information model can readily extend the capabilities of the system. No change to any of the display or searching software is required. The only change needed is to link new analysis functions into the analysis processor.

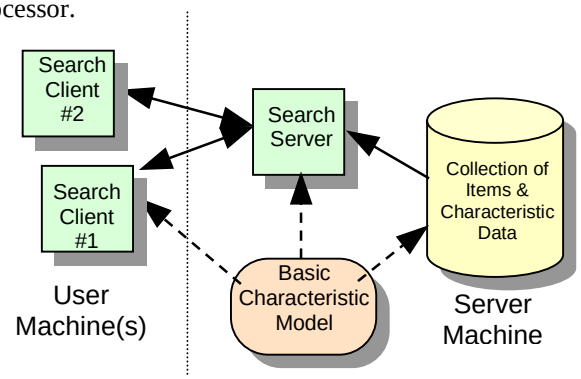

Figure 1: Model–driven Search Server/Client Architecture

Further information about the STEED project and its use of information models to generate software and control tools may be found at the project web site: http://mint.cs.man.ac.uk/projects/steed/index.html

3. Acknowledgements

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4. Reference

[1] *Industrial automation systems and integration: Product data representation and exchange: Part 11: Description methods: The Express language reference manual*, ISO 10303-11:1994