The graphical 'Google' for engineers goes 3D

May 6 2005

The first commercial design retrieval system in the world that can find 2D engineering drawings from a sketch has now been extended to work with 3D CAD solid modelling environments.
The new system is tightly integrated with SolidWorks so that a designer can draw or model the part they want within their own 3D CAD system and then search for matching 3D models or 2D legacy drawings at the click of a button. The process is so simple that a company's wealth of past designs, including those only held in 2D formats, can be checked as a normal part of the way that the designer creates or modifies parts in their 3D CAD system.

Current retrieval systems, like those used by Product Data Management systems, work by using text descriptions. However, this causes difficulties when there are multiple types of part or parts which are the same but have multiple descriptions. CADFind works the way designers do - the user sketches what they want and CADFind locates it. If the part found is a 3D model it can be loaded back into SolidWorks for viewing or modification. If it is a 2D drawing it can be examined in CADFind's own 2D/3D viewer.

Part coding systems (or Group Technology codes) are a proven technology and have been around for many years but they have always needed a skilled engineer to interpret the drawing and produce the code. Manual coding rates rarely exceed 100 parts per day per engineer meaning it would take a skilled engineer well over a year to code a modest database of 30,000 parts. With CADFind one click coding, no skill is required and parts can be added to its database almost

instantaneously.

It has been estimated that CADFind's original 2D programme meant that companies could save thousands of pounds in part design by allowing the user to search, retrieve and use geometrically similar parts from their database, based on a customer drawing or a simple sketch*. Now, with the 3D facility, the cost saving can be applied to the whole range of a company's parts, in 2D or 3D.

Applied Search Technology Ltd was formed in 2004 by Doug Love, Jeff Barton and Neville Holmes as a 'start-up' through Aston University's Business Partnership Unit. It is currently based in Aston Science Park on the University campus. CADFind is the result of many years of research into part retrieval and classification and the system has been tested on genuine engineering databases of over 20,000 drawings. It has also been trialled by local manufacturing firm Frank Allart Limited.

A workable demonstration programme of CADFind is available to download at www.sketchandsearch.com/.

Recent research by the US Department of Defense estimates that $20,000 is saved each time redesign is avoided. Retrieval of an existing part rather than designing anew one could save $5m in a typical product programme.

Source: Aston University