Semantic Designs Wins New Dow Chemical Process Control Software Reengineering Contract

New enhancements to Semantic Designs' custom, automated migration support tools will be used by The Dow Chemical Company to execute its migration from proprietary MOD5 control systems for chemical manufacturing plants to standard industrial controllers.

In 2012, Semantic Designs (SD) was contracted by The Dow Chemical Company (NYSE:DOW) to build a custom tool, dubbed "Sequoia", to automate much of the conversion of production chemical plant process control applications in Dow's world-wide facilities from MOD5 to modern industrial control languages.

Dow, having used a first version of Sequoia successfully in several pilot migrations to produce new code for running plants, has issued a new contract to SD to improve Sequoia, enhancing quality and level of automation, further shortening plant conversion times.

A second version of Sequoia is under development with additional techniques in concept recognition, analysis, and translation that can be used to enhance Sequoia's capability. Dow has contracted with SD to make those additional changes over a period of about one year. Dr. Ira Baxter, CEO/CTO of SD said, "We expect to advance the state-of-the-art to handle delicate issues such as code shared between concept idioms."

Sequoia is built on a foundation provided by Semantic Designs' industry-leading DMS® Software Reengineering Toolkit™, an engine for building customizable tools for analyzing and transforming the source code of large, complex software systems. DMS is unique in the software industry in its ability to process a wide variety of modern and legacy computer languages with the same or better precision as the compiler and development tools for those languages, including Java 8, COBOL, C++17, SQL, HTML, and many others. Unlike standard development tools, DMS can absorb an entire software system of millions of lines to collect facts only available by system-wide analysis. That knowledge is then used to achieve desired customer effects, especially massive automated change, driven by pattern-directed matching and code transformation rules. Dr. Baxter noted that DMS's success comes from its generality, compared to the typical limitations of point-solution tools. Sequoia uses a recent extension to DMS that matches code idioms using data flows, enabling it to extract an accurate code model.

Semantic Designs has been applying DMS to a wide variety of complex software engineering tasks, including analysis of large core-banking software systems for Australia-New Zealand bank, discovering relationships in the enormous mainframe software systems of the U.S. Social Security Administration to enable impact analysis, and migrating sophisticated embedded systems such as the B-2 Stealth Bomber mission software for Northrop Grumman and the U.S. Air Force. Other customers include Boeing, J.P. Morgan, Cisco Systems, Raytheon and Rockwell Collins. SD also has software engineering research contracts with the U.S. Department of Energy.

DMS is a registered trademark of Semantic Designs. "Software Reengineering Toolkit" is a trademark of Semantic Designs.

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