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CRI and Pavilion Launch CATSCAN® Online Performance Modeling Solution

Real-time Catalyst Monitoring Software Improves Profitability for Styrene Manufacturers

HOUSTON, Texas—October 7, 2002—CRI Catalyst Company and Pavilion Technologies, Inc. today announced the introduction of CATSCAN® catalyst performance modeling system. CATSCAN combines CRI's catalyst expertise with Pavilion's advanced predictive modeling software to improve operational performance, enhance catalyst life and reduce production costs for styrene manufacturers. CATSCAN will be included as a standard part of CRI's technical performance package.

CRI expects CATSCAN to save companies as much as \$500,000 to \$700,000 per year in reduced operating costs and improved catalyst life.

Sterling Chemicals has been a key development partner for CATSCAN. The company used the software solution to monitor and model two reactors at its styrene facility in Texas City, Texas for the past ten months.

“CATSCAN has been a key performance-management tool for our company since installation,” said Dennis Yieh, process control technologist at Sterling Chemicals. “CATSCAN helps us improve operating decisions and better understand the impact of key variables on catalyst performance.”

Although Sterling Chemicals had an in-house reactor-modeling tool and well-established performance analysis processes, CATSCAN delivered enhanced results. CATSCAN's success rests in more accurate catalyst models tied to real-time production data.

“Reactor performance analysis used to be a costly, periodic process that only represented a snapshot in time,” said Yieh. “With CATSCAN, we can now see how well the reactor is performing every minute in real time. Performance problems are spotted much sooner, and decisions to change to new operating conditions can be made faster and with a higher degree of confidence and certainty. It is as if the performance of the catalyst is watched over by a CRI catalyst specialist around the clock.”

CATSCAN uses proprietary models of catalyst performance, real-time reactor information and periodic lab results to continuously predict catalyst performance and lifecycle. CATSCAN's conversion calculation engine allows users to simulate the conversion outcome based upon different input conditions. With CATSCAN, operators can monitor catalyst activity, selectivity and conversion, as well as track other key process variables that affect catalyst performance. CATSCAN also enables users to run different “what-if” scenarios to determine the optimal operating conditions to achieve a given production target.

“Most reactor performance analysis today is based on limited, periodic processes that have been in use for decades,” said Jim Wambaugh, director of CRI’s styrene business unit. “This traditional method creates ‘blind spots’ for managers who are trying to make the best decisions they can, but without the full picture. CATSCAN gives styrene manufacturers a real-time, predictive performance dashboard. The results are better decisions, faster response and, ultimately, improved performance. In addition, CATSCAN enhances the level of technical support CRI provides its customers.”

“CATSCAN is an example of the value Pavilion brings to companies who are committed to continually improving performance across the enterprise,” said Doug Johnson, Pavilion COO. “CRI is investing in its customers, giving them more insight into their manufacturing processes. With better understanding comes enhanced control, which leads to superior performance and increased profitability.”

CATSCAN delivers the following benefits:

- Enhanced decision making with more timely data
- More accurate forecasting of catalyst life
- Earlier response to problems
- Online modeling tools tied to actual operation
- Reduced data-handling time

CRI Catalyst will sell, market and maintain the CATSCAN software as part of its styrene catalyst technical performance package. Pavilion will continue to provide technology updates and support to customers through CRI. To learn more about this product, visit the Web site at www.CRI-CATSCAN.com.

About Pavilion (www.pavtech.com)

More than 350 top companies worldwide rely on Pavilion performance optimization software and services to create millions of dollars in value every day. Pavilion's model-based technology allows decision-makers throughout the enterprise to tie action to strategy, creating a more prosperous company with every decision. Pavilion's vision is based on an approach to business called REO(tm) - Real-time Enterprise Optimization — the idea that an enterprise can continually optimize its performance by sensing and responding to business dynamics. Established in 1991 and headquartered in Austin, Texas, Pavilion Technologies, Inc. is a privately held corporation with offices in the U.S., Belgium, Japan, Australia and New Zealand.

About CRI Catalyst Company (www.cricatalyst.com)

CRI Catalyst Company (CRICC) is part of CRI International, the global catalyst technology company of the Royal Dutch / Shell Group. CRICC operates research laboratories, development facilities, manufacturing plants and business units throughout the world dedicated to providing a broad customer base with the most effective and cost-efficient catalysts and technologies. Specific areas of focus include hydrogenation, oxidation, dehydrogenation and environmental catalysts and systems. Fully integrated technical service and support groups further enhance the customer value of CRICC’s products, and facilitate creative solutions to the most difficult customer problems