

## Solvay Increases Efficiency with Honeywell's Profit Loop



“Thanks to Honeywell's Profit Loop solution, we have improved results in both control and maintenance mainly due to the reduction of time in parameters. Implementing this solution for most of our control loops helped us achieve our desired automation objectives.”

Rafael Truan Cacho, Control and Instrumentation Manager, Solvay Torrelavega

### Benefits

Solvay is an international chemical and pharmaceutical group with headquarters in Brussels and operations in more than 50 countries. At its Torrelavega production center in Spain, Solvay produces a wide variety of chemical products. With various control solutions already in place, the company looked to further optimize its plant and incorporate the best elements of traditional PID algorithms and model-based control and optimization technologies.

Having already implemented Honeywell's Experion<sup>®</sup> Process Knowledge System (PKS) and TotalPlant Solution (TPS) control systems, Solvay had extensive knowledge of Honeywell's control solutions. The company subsequently selected Honeywell's Profit<sup>®</sup> Loop, a patented algorithm representing a single input/single output (SISO) model-predictive controller to help predict the effect of past, present and future control moves on the process variable.

By using the Profit Loop algorithm over standard PID, Solvay identified several benefits:

- Easy loop control thanks to “one-knob” tuning without the worry of adjusting gain, reset and derivative times.
- Expanded range control enabled by Profit Loop helps to control the process variable within a dead band without controlling a particular setpoint, minimizing valve movements and maintenance.
- User-friendly assistant provided significant time savings when implementing input/output values and storing results.
- Improved process control helped improve plant efficiency and optimization.
- Honeywell solution eliminated the need for additional control tuning, software and third-party services.



Honeywell's Experion and Profit Loop solutions helped Solvay optimize its Torrelavega, Spain, chemical plant.

### Background

Solvay employs more than 29,000 people in 50 countries on every continent around the world. In 2008, its consolidated sales amounted to EUR 9.5 billion, generated by profitable and growing businesses in pharmaceuticals, chemicals and selected plastics.

Solvay's plant in Torrelavega, Spain is a production center for chemical products such as soda ash, sodium bicarbonate (BICAR<sup>®</sup>), chlorine, sodium hypochlorite, hydrochloric acid and caustic soda.

## Challenge

In order to optimize plant operations at its chemical production facility in Torrelavega, Spain, Solvay looked for a partner to help optimize production and achieve better control through predictive behavior.

"We have an exceptional knowledge of control at this company and wanted to find an advanced solution over traditional PID," said Rafael Truan Cacho, Control and Instrumentation Manager, Solvay Torrelavega.

## Solution

With Honeywell's Experion PKS and TPS control systems already installed at the Torrelavega site, Solvay had extensive knowledge as to how these solutions worked. This assisted the company in implementing Honeywell's Profit Loop algorithm for most of its existing control loops.

Profit Loop is Honeywell's patented algorithm that represents a SISO model-predictive controller specifically designed with the operating simplicity and computational efficiency of a standard PID controller. By using a simple model of the process to predict the effect of past, present and future control moves on the process variable, the controller knows how much to move the process in order to meet a company's desired control objectives.

"At Solvay, we experienced firsthand how Honeywell's Profit Loop algorithm offers three main advantages over the standard PID," said Cacho. "Those advantages are easy loop tuning, a full-range control algorithm and the user-friendly Profit Loop Assistant."

**Easy Loop Tuning** – With Profit Loop tuning, it was no longer necessary to adjust the gain, reset and derivative times. With only one parameter, via the performance ratio, the "one-knob" tuning enabled single-variable adjustment depending on the loop response.

**Robust Range Control Algorithm (RCA)** – The use of Honeywell's patented RCA allows Profit Loop to control the process variable within a dead band without controlling to a particular setpoint. This is especially valuable for tank levels in which the process variable is maintained within those levels while significantly reducing control valve wear. The solution minimizes valve movements as well as valve maintenance.

**User-friendly Profit Loop Assistant** – When other PID equations, operators had used the assistant for loop tuning. This acts in a way that performs the steps on the output values and stores the results. When a result is reached, there are two options: either a model with the transfer equation or suggested parameters depending on the type of loop and on the required response. This provides significant time savings when implementing PID gain, reset and derivative parameters.

"We found that Profit Loop incorporates the best elements of traditional PID algorithms and model-based control and optimization technologies," added Cacho. "Ideal for our type of application, it enabled us to boost our efficiency and optimize our plant processes."

Experion® and Profit® are registered trademarks of Honeywell International Inc.

## More Information

For more information on Honeywell's advanced process control solutions, visit [www.honeywell.com/ps](http://www.honeywell.com/ps) or contact your Honeywell account manager.

## Automation & Control Solutions

Process Solutions

Honeywell

1860 W. Rose Garden Lane

Phoenix, AZ 85027

Tel: 800-822-7673

[www.honeywell.com/ps](http://www.honeywell.com/ps)