

# ONGC Improves Process Performance with Profit Controller and Profit SensorPro



Implementing Honeywell’s advanced process control software, Oil and Natural Gas Corporation (ONGC), India, increased output by 8655 tonnes per annum from two units. The installed solution includes Profit® Controller, based on Honeywell’s patented Robust Multivariable Predictive Control Technology (RMPCT).

### Benefits

ONGC, a horizontally integrated petroleum company, is India’s most profitable corporation. The company contributes 77 percent of India’s crude oil and 81 percent of natural gas production. The Uran complex of ONGC is a receiving on-shore point for oil and gas from its offshore installations.

The Profit Controller implementation helped ONGC:

- Increase production by 7255 tpa from the Ethane Propane Recovery Unit (EPRU)
- Increase LPG and LAN yield by 1400 tpa from Condensate Fractionation Unit (CFU-II)
- Achieve a smooth and robust operation
- Maximize unit throughput, improve product quality, and minimize energy usage

In addition, the following installation benefits were realized:

- The project paid for itself in just two months
- The optimizer speed feature enabled easy tuning for disturbance absorption and the gradual introduction of the full optimization
- Minimal effort was required to tune and commission the Profit Controller

### The Challenge

Project goals for the EPRU included:

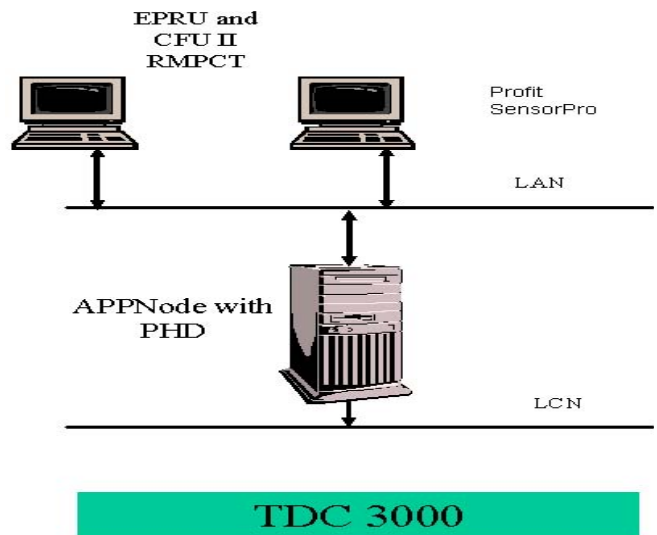
- Increase plant throughput
- Minimize C2 content in lean gas
- Maximize chilling and separation in all sub-units including de-methaniser
- Optimize reflux to de-methaniser column

Project goals for the CFU-II included:

- Maximize LPG and LAN production while honoring the product specification limits
- Optimize stripper column operation through steam consumption
- Optimize LPG column operation through steam consumption and reflux rate

### The Solution

Engineers from ONGC and Honeywell worked together to implement a multivariable predictive controller and inferential property prediction package based on Honeywell’s Profit Controller offering. Profit Controller was implemented on the EPRU and CFU-II. Tuning Profit Controller was easily accomplished with a standard interface, Profit Viewer. All values entered in the advanced process control graphics were checked with the values observed in Profit Viewer.



APC Computer Architecture

The ability of the controller to reject various disturbances was easily seen in simulations. Simulations also provided an opportunity for setting the tuning parameters to reasonable initial values.

All the important product qualities were effectively predicted online using Honeywell's Profit SensorPro technology.

Profit Controller performs the following functions in the EPRU unit:

- Controls methane at the bottom by manipulating the column overhead pressure, column bottom temperature, and reflux flow
- Controls ethane in overheads by manipulating the column overhead pressure, top temperature, and reflux flow

Profit Controller performs the following functions in the CFU-II unit:

- Achieves the maximization of LPG by manipulating the column overhead pressure, column temperature, and reflux flow
- Controls LPG weathering by manipulating the column temperature, pressure, and reflux flow
- Controls LPG C2 content by manipulating the stripper column temperature
- Controls LAN RVP by manipulating the column bottom temperature

ONGC officials involved during implementation:

Sh. A.K. Rout, Chief Engineer (Instrument)

Sh T.V. Aditya Kumar, Superintending Engineer (Instrument)

Sh. A.G. Dahake, Superintending Engineer (Production)

Sh. J.V.N. Rao, Superintending Engineer (Production)

Sh. S. Chakraborty, Deputy Superintending Engineer (Production)

Sh. S. Maitra, Deputy Superintending Engineer (Instrument)

### For More Information

To learn more about how Profit Controller can improve your business performance and peace of mind, visit [www.honeywell.com/ps](http://www.honeywell.com/ps) or contact your Honeywell account manager.

### Automation & Control Solutions

Process Solutions

Honeywell

2500 W. Union Hills Dr.

Phoenix, AZ 85027

Tel: 877.466.3993 or 602.313.6665

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

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