PVMTC OIL & GAS SIMULATOR

A NEW PERSPECTIVE

The Oil and Gas simulator is a dynamic real-time simulator for teaching and learning different aspects of a Refinery/ Gas   Processing/ Petrochemical/ plant. The Oil and Gas Simulator is designed by Sim Infosystems, India to create a safe and informative environment for expanding knowledge and experience.:

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- ### BACKGROUND

Petro Vietnam Manpower Training College (PVMTC) is the leading Institute in providing technical training to Refinery / Gas Processing / Petrochemical industry personal in Vietnam. The Oil & Gas Simulator is used to provide plant operational skills and experience. Sim Infosystems has implemented the Oil & Gas Simulators (3 Nos) at PVMTC, Vung Tau, S.R Vietnam.

- ### ProSimulator INSTRUCTOR STATION

ProSimulator Instructor station enables the instructor to control and direct the training sessions. From the Instructor station, multiple independent training sessions can be invoked by the Instructor and each training sessions can be assigned to work with one or more operator stations. Using this software the Instructor can load a model, invoke malfunctions and monitor the performance of the trainee.

ProSimulator OPERATOR STATION

The simulator is provided with emulation for Yokogawa Centum VP and Honeywell Experion DCS. All functions and features that are essential for training are included in the emulation. The controls and interlock logic are also simulated and provides exact replica of the real plant systems. The field operations are simulated through separate FOD graphics on the operator station.

ProSimulator PROCESS MODELS

ProSimulator simulation models are based on rigorous application of first principles calculations. It provides a comprehensive Physical Property methods Database, thermodynamic, unit library, instrument/control library and Numerical methods.

BENEFITS OF PVMTC OIL & GAS SIMULATOR

- ✓ Familiarize with various refinery and gas plant configuration and key operating parameters
- ✓ Practice Normal plant operations
- ✓ Practice Standard Operating Procedures including Startup & shutdown
- ✓ Familiarize with the control system
- ✓ Familiarize with Safety system
- ✓ Trouble shooting
- ✓ Ability to respond to Emergencies
- ✓ Optimize production
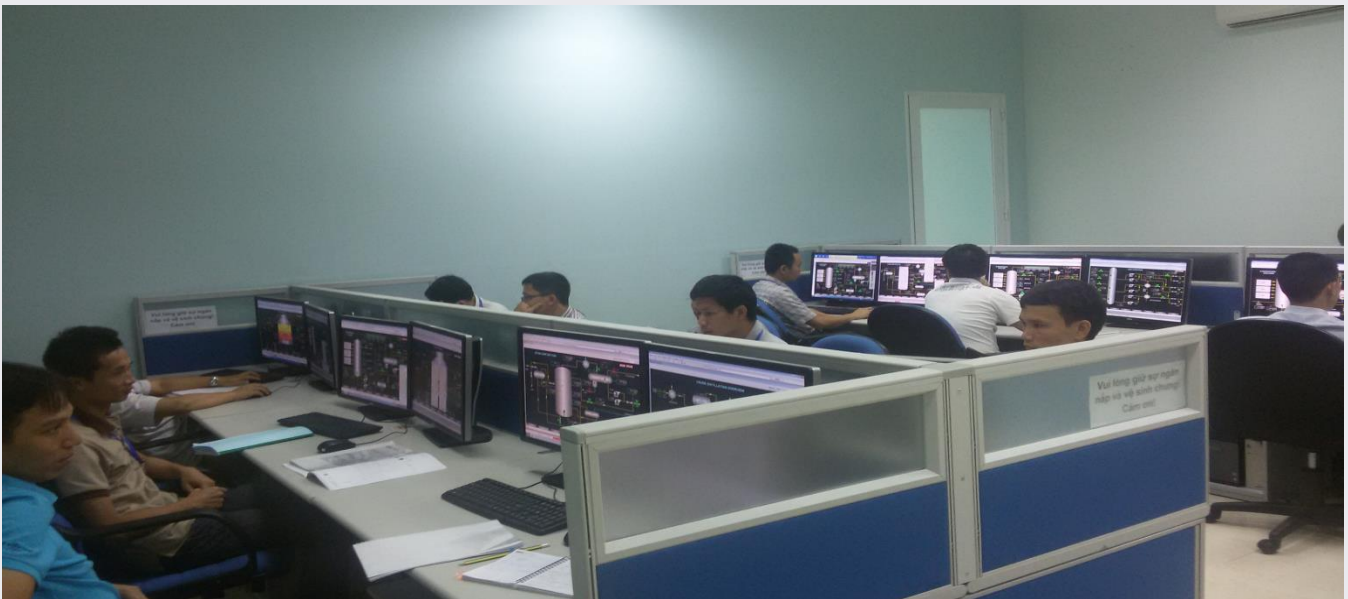
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SIM INFOSYSTEMS PVT. LTD.

11, 1st Cross Street, Nehru Nagar, Kotivakkam
Chennai 600041, INDIA
Phone: +91-44-2454 2617
E-mail: sales@siminfosystems.com
www.siminfosystems.com

The following simulation models are installed in the PVMTC Oil & Gas Simulator:

Simulation software package	Simulation models
(1) **Basic Process Operations package**	(1.1) Distillation (1.2) Superheated Steam (1.3) Centrifugal Pump (1.4) Flash Tank (1.5) Heat Exchanger (1.6) Natural / Forced draft furnace (1.7) Continuous Stirred Tank Reactor (1.8) Fixed bed reactor (1.9) Plug flow reactor (1.10) Cyclone separator (1.11) Crystallizer (1.12) Centrifugal Compressor (1.13) Reciprocating compressor (1.14) Evaporator (1.15) Blending
(2) **Refinery Operations package**	(2.1) Atmospheric Distillation Unit (CDU) (2.2) Vacuum Distillation Unit (VDU) (2.3) Fluid Catalytic Cracking Unit (FCCU (2.4) Hydrogen Generation Unit (HGU) (2.5) Hydrodeslphurization Unit (HDS) (2.6) Catalytic Reforming Unit (2.7) Continuous Catalytic Regeneration Unit (CCR) (2.8) Hydrocracking Unit (HCU) (2.9) Sulphur Recovery Unit (SRU) (2.10) Amine Treating Unit (ATU) (2.11) Kerosene Hydrotreater Unit (KHDT) (2.12) Diesel Hydrotreater Unit (DHDT) (2.13) Naphtha Hydrotreating Unit (NHT) (2.14) Isomerization Unit
(3) **Fertilizer Operations package**	(3.1) Ammonia plant (3.2) Urea Plant (3.3) Sulphuric Acid Plant
(4) **Gas Plant Operations package**	(4.1) Gas Oil Separation Plant (GOSP) (4.2) Degassing Plant (4.3) Gas Dehydration unit (4.4) LPG Unit (4.5) NGL Recovery Unit (4.6) LNG Plant
(5) **Petrochemical Operations package**	(5.1) BTX Production (5.2) Styrene production (5.3) Allyl Alcohol Unit (AAL)
(6) **Boiler Operations package**	(6.1) Pulveriser Fuel system (6.2) Oil Firing System (6.3) Flue Gas and Air system (6.4) Superheater & Reheater system (6.5) Boiler Drum (6.6) Water Treatment plant

TO WHOM IT MAY CONCERN

Petro Vietnam Manpower Training College (PVMTC) is the leading Institute in providing technical training to Refinery / Gas Processing / Petrochemical industry personal in Vietnam.

Sim Infosystems has implemented the Oil & Gas Simulators (3 Nos) at PVMTC, Vung Tau during 2014, to provide plant operational skills and experience. This is a dynamic real-time simulator for teaching and learning different aspects of a Refinery/ Gas Processing/ Petrochemical/ plant. The Oil and Gas provides a safe and informative environment for expanding knowledge and experience.

The simulator consists of

- Simulator hardware – 3 simulator setup each with one instructor & 12 operator stations
- Instructor Station software to control and direct the training sessions and evaluate operator performance
- Yokogawa Centum VP DCS and Honeywell Experion DCS emulated operator station software
- ProSimulator simulation models based on rigorous application of first principles calculations for the following packages:
    - Basic Process Operations / Boiler Operations
    - Refinery Operations
    - Fertilizer Operations / Petrochemical Operations
    - Gas Plant Operations

Sim Infosystems has trained our Instructors on the simulator as well deputed their experienced instructors for providing training to our clients during the year 2014 and 2015.

We are very happy with the simulation products and professional services of Sim Infosystems.

We have no hesitation in recommending Sim Infosystems as a proven simulator vendor to other Companies / Institutes.

Your faithfully,

Dr. Nguyen Huynh Dong,
dean of Petroleum faculty
On behalf of PVMTC