PRACTICE OF PRO II/PROVISION SIMULATION SOFTWARE

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OBJECTIVES

To provide the **practical knowledge** required to use the PRO II/PROVISION simulation software.

On completion of the course, the participants:

- are able to perform the simulation of **industrial flowschemes** composed of different unit operations (flash, distillation, pumps, compressors, heat exchangers, …)
- are able to read and analyze the **outputs** provided by the simulation
- have got the necessary concepts to use different **simulation tools** as controller, optimizer, calculator, stream calculator, case study, …

COURSE CONTENT

SIMULATION PRINCIPLES AND DATA PREPARATION — 0.5 day

PRO II simulation principles: concepts of **streams** and **units**.

Getting started with PRO II/PROVISION: start a new simulation or open an existing simulation file, import a **keyword input file**, export a **simulation database**.

Presentation of the different menus, of the ribbon bar buttons, of the PFD Main Window and of the PFD palette. Presentation of the input and output files.

Thermodynamic methods: available models, elements of choice.

Supplying required data for **components** and **feed streams**: pure components, petroleum pseudo components, analysis data.

LIQUID-VAPOR EQUILIBRIA — 0.25 day

Required data for a liquid-vapor equilibrium (flash) simulation.

Different types of **flash specifications**: fixed pressure and temperature, bubble point, dew point, …

Practice*: flash of a mixture of hydrocarbons, water-hydrocarbons mixture dew point.*

DISTILLATION — 0.25 day

Required **data** for the simulation of a distillation column: number of trays, feeds and products, pressure profile, type of condenser and reboiler, …

Different types of **specifications** - Available **parameters**.

Print options: temperature, rate or composition profiles.

Practice*: design of a depropanizer and a draw-off column.*

PUMPS, COMPRESSORS, EXPANDERS, HEAT EXCHANGERS, REACTORS — 0.25 day

Required data for these pieces of equipment. Interpretation of the simulation results.

Practice*: two-stage compressor with intercooler.*

PRACTICE, CASE STUDIES AND COMPLEMENTARY TOOLS — 0.75 day

Cryogenic cycle (flash, compressor, heat exchanger, …): determination of the cooling fluid to be implemented in different cases (use of a “controller”).

Gas expander cycle (compressor, expander, reactor, heat exchanger, …): determination of the efficiency in different cases (use of a “calculator”).

Distillation column: optimization of the feed inlet tray location (use of an “optimizer” or “a case study”). Tray sizing.

▲ Who should attend?

Junior or more experienced engineers looking for a practical initiation to the industrial units simulation with the PRO II/PROVISION software.

▲ Duration

2 days

▲ Dates & Location

Non-scheduled

May only be organized for a single company

▲ Tuition Fees

To be agreed upon

▲ Course Coordinator

Carole Le Mirronet

Ref. **GCA / PRO2-E**

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