Petro Farayand Barsava

Research, Consultant and Training

(Oil, Gas & Petrochemical)

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PFB Mission

Our mission at PFB (Petro Farayand Barssava) is to provide innovative engineering services in the field of oil, gas and petrochemical processes. Our solutions are based on rigorous steady-state and dynamic simulation. We believe our flexible, customer focused and adaptable approach means that PFB can offer you a solution to any of your process operation needs; from E-learning multimedia packages right through to complete interactive virtual plants like OTS (Operator Training Simulator).

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Address: NO. 124, Center of Knowledge-based Incubator Unites, Ferdowsi University Of Mashhad, Azadi Square, Mashhad, Razavi Khorasan Province, Iran **PFB**'s engineering team can offer your facility a complete site specific operator training simulator (OTS) which emulates your process plant and DCS control screens. We strive to be the world's leading provider of quality dynamic process simulators. We strive to be the leading provider of dynamic process simulators in the world, especially in the Middle East and the oil-rich countries of the Persian Gulf. Our simulators are continuously developed and upgraded by PFB team in-house and has been widely verified by SPGC, NIGC and other major clients as being an accurate dynamic representation of the real plant.





PFB Operator Training Simulators (OTS) include the simulation of the control system and the process. The control system displays are virtualized or emulated and connected to a dynamic process model. The industry standard control system user interface uses P&ID style graphics, faceplates, and tabular displays in a 2D format on a CRT screen.

Typically, there are at least three categories of dynamic simulators (DS) adopted for the implementation of an OTS. A common classification is:

- Tieback Simulators
- Medium-Fidelity Simulators
- High-Fidelity Simulators
- ⇒ PFB simulators involves the simulation of the manufacturing process mechanics, chemistry and physics properties, thermodynamic, hydraulic. The models used for these process are high fidelity including models for chemical reactor kinetics, rate-based models for distillation columns, equipment models of pumps and compressors based on performance curves, piping, and rigorous heat exchangers models.

- ⇒ PFB Virtual simulators use the actual code from both the control logic and the Graphic user interface (GUI). This is provided by the control system supplier along with an API (Application Programming Interface) to communicate to the process simulation. Typically, PFB use one OPC UA like aspen IP 21 for this issue.
- ⇒ When creating an Operator Training Simulator, it is vital that it has the same ergonomics as the real control room. A cost effective way to achieve this is for us to create an emulation of the control system used on your asset. This is where we recreate all the most important elements of the control system which we then link into a dynamic simulation mathematics. PFB has extensive experience in doing this. Below are examples of key systems we can emulate:
 - Control Room Screens
 - ESD/Cause and Effect Systems with MIH/SIH option
 - Faceplates with tuning option
 - Alarm Systems
 - Event Systems





