PE Limited

Engineering & Geological Software Development

Digital Oil Field (**IFM**, **IVM** & **MC**) Engineering Course

Target Audience:

This course is targeted to those engineers that have (i) attended the ***Standard* IPM** course previously, and (ii) have consolidated their familiarity of **MBAL**, **PROSPER** and **GAP** through consistent use over time. This course will assume a base level of familiarity of the tools, and is intended promote the analytical features available in creating physics based field realisations in the **IPM** tools.

Overall Objectives:

1/ Developing dexterity in integrating production models together using **RESOLVE**
2/ Understanding and selecting appropriate solution strategies
3/ Using workflows to detect and mitigate flow related behaviour, and implement Field Rules

Course Agenda

Day One

- Introduction to the Digital Oil Field (**DOF**)
- Use of Model Catalogue to manage models.
  - Adding a new model (add Model)
  - Getting a Copy of an exitsing Model (Get Copy)
  - Updating an Existing Model (Check Out/Check In)
  - ModelCatalogue Security (Users Privieges)
  - Sharing Models
  - Interaction between **ModelCatalogue** and **IFM**
- **IFM** Workflows
  - Real-Time Surveillance
    - Introduction to the Real-Time Calculator (RTC) In **IFM**
    - Well Rate Estimation Workflow (WRE)
      - Principals on using various rate methods to detect events
      - Techniques and methodologies of the various rate methods
      - Exercises to understand how to use these methodologies to detect events and changing conditions on the field.

Day Two

- Creating a new field in **IFM**
- Using **IFM** Workflows
  - Production Well Test Validation and Analysis Workflows (ECQ)
    - Well Test validation (VLP/IPR Workflow)
    - Well Test Analysis (Single Rate)
    - Well Test Analysis (Multi-Rate)
    - Mobility Workflow
  - System Quality Control Workflows (SQC)
  - Optimisation Workflows
  - (OPT) Forecasting Workflows (FOR)

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Day Three

- Operating a Digital Oil field system in Real-Time
    - We will be in charge of managing a Field (Petex Virtual Field) using a live Real-Time system which will resemble the type of DoF Deployment engineers will use in their assets.
    - Introduction to **IVM** (Trending, Plotting, Visualisation, Well Test Manager etc.)
    - The well surveillance cycle using the umbrella "AWS Workflow"

Day Four

- Building Visual Workflows in **IFM**
    - Choke Method
    - WHP Method
    - IPR Method
    - VLP Method
    - Water Cut Calculator

Day Five

- Workshop

  The engineers will be given an objective and will have to come up with a logic and implement it as a Visual Workflow. This will then be included as part of the real-time system and the outputs will be visualised in **IVM**.