SPE 88748 Development and Applications of the Sustaining Integrated Asset Modeling Tool

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IPM models allow complete systems from the reservoir through to the surface facilities to be built while accounting for all of the components' interactions. The value of these models is lost if they are not regularly updated to keep them valid and accurate in forecasting and optimisation capabilities. As such, an application tool was developed to provide an easy way to update and maintain the IPM models. This drive automated the routine tasks allowing engineers to carry out technical engineering work rather than spending large amounts of time manually updating the models.

This paper presents the work process which automates many time-consuming and labour intensive tasks, streamlines data flow and uses high frequency SCADA data to carry out well performance analysis. The SIAM tool was developed to provide available data to the models and ensure well performance optimisation is carried out as well as continuous reservoir management and surveillance. The major SIAM tool functions are:

- Access reservoir pressure
- Access production well test data
- Adjust production rates in production well-test data
- Check current well-performance model
- Allocate well production rates
- Update IPM models and well matching parameters

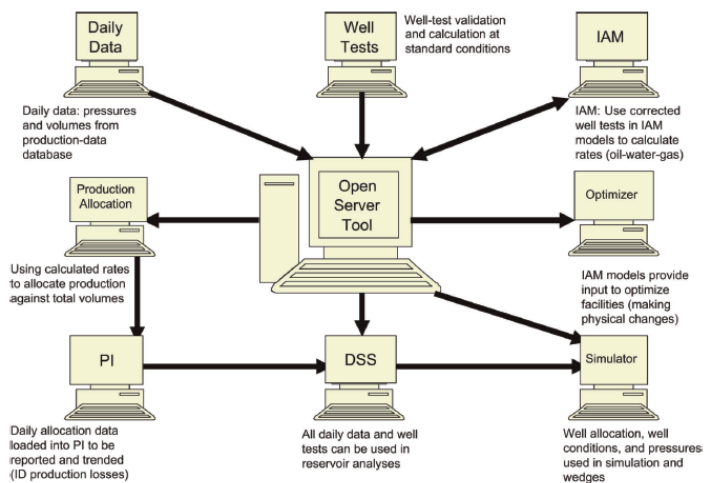The transfer of the data is carried out via OPENSERVER:

Fig. 2—Data flow and model applications in SIAM tool.

CONCLUSIONS:

- Automated routine data-processing tasks allowing engineers to focus on engineering analysis
- Produced a step change improvement in scope and application frequency of IPM models.
- Significantly reduced manual data entry for model updates.
- Improves accuracy of production allocation over traditional allocation methods.
- Captures additional value from real-field data beyond that obtained from traditional well performance trending and visualisation.
- Works with all well types.