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Abstract

Surveillance is among the group that deal with a lot of data in daily routine. Automation is key in all aspects of surveillance works from data entry, data interpretation and data visualization. This topic will focus on the journey by one of the operators in Peninsular Malaysia to digitalize surveillance routine and use enhanced data monitoring system to identify opportunities for production optimization as part of an effort to become a data-driven organization.

The essential step in digitalizing surveillance is to adopt and transition into fully integrated database and enhanced data monitoring system. It is mainly targeted to boost new-technology adoption among users, ensure smooth transition to new integrated database and ensure standardization among users of the new digital system. This mainly evolves around the implementation and usage of enterprise production database system (Data-1) and one stop data visualization center (Visual-1).

The first focus of this journey is to enhance user capability on the modules in Visual-1. Second focus is to ensure continuous data hygiene and storage in centralized data repository in Data-1 which must be in a standardized digital format. Third focus is on technical model hygiene for well and reservoir. They are regularly calibrated and must meet minimum viable percentage at all time. Fourth focus is to operationalize all input modules in Visual-1 like welltest validation, well monitoring and forecast generation.

To achieve the target for first focus, engineers are trained on the modules in Visual-1, especially on how to operate it and how to get insightful actions through the different modules. The training sessions are done via weekly online sharing session with assistance of power-users and in-house trainer. Second focus revolves around maintaining data hygiene inside centralized enterprise database (Data-1). Main objective of this focus is to ensure continuous and high-quality data upload. For this, complete data automation is achieved with the assistance from IT group and center with expectation that new data can be interpreted, analyzed, corrected, and uploaded into the integrated database timely within 1 month.

The third focus requires sustaining high model hygiene for both well and reservoir model inside Visual-1. Tedious frameworks were established for model calibration and with regular updates. These efforts ensure opportunities identification and well optimization happen with the right data at the right time. Fourth focus, short-term production forecast is now fully transitioned into an automated and integrated system inside Visual-1. Now the process is automated and tremendously helped to improve overall efficiency by reducing the overall burden on the engineers who used to spend hours on Excel to come up with the final report.

Right framework for Data-1 and Visual-1 enable capitalization of resources to generate additional value. It's continuously improved for consistency and fully integrated approach. The engineers really take this initiative to a whole new level by adapting fast and agile in ensuring the digital platform becomes a success and continuously seeking help and consulting on any problem with the center.