

**Development and implementation of APCSIM and ALMCS based on the domestic digital platform AVIST Oil & Gas within the framework of “Intellectual Field” project of PJSC LUKOIL**

<b>Sector:</b>	Oil and Gas
<b>Region:</b>	Russia
<b>Year:</b>	2018
<b>Client:</b>	LUKOIL
<b>Task:</b>	<ol style="list-style-type: none"><li>1. Obtain tools for effective analysis and justification of proposals to action plans for field production, based on the production system capabilities. Reduce time for development and justification of operating modes and service wells.</li><li>2. Draw up a plan of priority actions relating to operational and investment issues for various planning horizons.</li><li>3. Optimize hydrocarbon production processes via the modeling technologies applied.</li><li>4. Ensure control over production facilities’ actual state with an ability to predict “bottlenecks” and risks in current and long-term plans based on Integrated Models and Limitation Models.</li><li>5. Based on the analysis of production facilities state, ensure production integrity, prompt identification and minimization of losses from potential production and minimize shortfalls.</li></ol>

Development and implementation of an Automated Process Control System for Integrated Modeling (APCSIM) and an Automated Limitation Model Control System (ALMCS) based on the domestic digital platform AVIST Oil & Gas within the framework of the “LUKOIL” PJSC “Intellectual Field” project.

The joint project work of employee teams from LUKOIL-NIZHNEVOLZHSKNEFT LLC, LUKOIL-PERM LLC, RITEK JSC, LUKOIL-INFORM LLC, and the ITPS Group of Companies (work was carried out from August 2016 to April 2018).

<b>Result:</b>	<ol style="list-style-type: none"><li>1. Increase in production by 5-10% due to a</li></ol>
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reduction of reported losses in the first two years. Effects of using the system in the long run: an increase in ORI (oil recovery index) by 1-2%.

2. Reduction of expenses by 10-15% owing to reduction of operating and capital costs.
3. Reduction of shortfalls and losses due to optimization of well operating modes down to 0% (the standard allowance for shortfalls and losses is 3%).
4. Reduction in planning time with scenario forecasting from 3 months to 1-2 weeks.
5. Efficient generation of proposals for operating mode adjustments (from several days to several hours).
6. Reaching oil production targets in abnormal and emergency situations based on potential reserves used.
7. Reduced timing for annual and medium-term plans related to oil-production. Improved planning efficiency of strategic investment events expected to last for more than 1 year.

Higher accuracy in long-term forecasting and quicker, more effective management decisions.

**Review:**

“At present, specialists of PJSC LUKOIL and LUKOIL subsidiaries actively use APCSIM and ALMCS solutions implemented in such a way as to be compatible and fully integrated with the LUKOIL information technology environment. We plan to further our cooperation in the development of automated solutions and technologies within the framework of the LUKOIL Intellectual Field Project...

...We would recommend the ITPS Group of Companies as an integrated partner for digital transformation and implementation of solutions based on the AVIST digital production integration platform”.

Acting Senior Vice-President for Oil and Gas Production, A. Habibullin

\*The material is available in Russian version only