

SMART FIELD



Production

SMART CONTROL STATION

Smart Control Stations VLT SALT Danfoss installed give an opportunity of remote well control.



Oil Collection and Treatment

OIL TREATMENT MONITORING

The Oil Collection and Treatment Monitoring Module allows online monitoring and control of the production process associated with the oil treatment.



Well Repairs

WELL SERVICING TEAM MONITORING

The Well Servicing Team Monitoring Module in the Smart Field System allows online monitoring of the progress of repairs performed by the teams.



Production Monitoring

WELL PRODUCTION MONITORING

The Production Monitoring Module allows online control, monitoring and obtaining of necessary information.



GEOGRAPHIC INFORMATION SYSTEM

Corporate Geographic Information System (CGIS) allows storing the data from all sites, i.e. information is constantly updated for all production sites, buildings and facilities, including roads, mining and land allotments, etc.



Video

SITE MONITORING

Video surveillance system is used to control the perimeter of the production facilities and also registers (recognizes) vehicles entering the site.



GPS

TRANSPORT MONITORING

Satellite Monitoring System Wialon allows online transport monitoring, including comprehensive analytics and reports for end users.



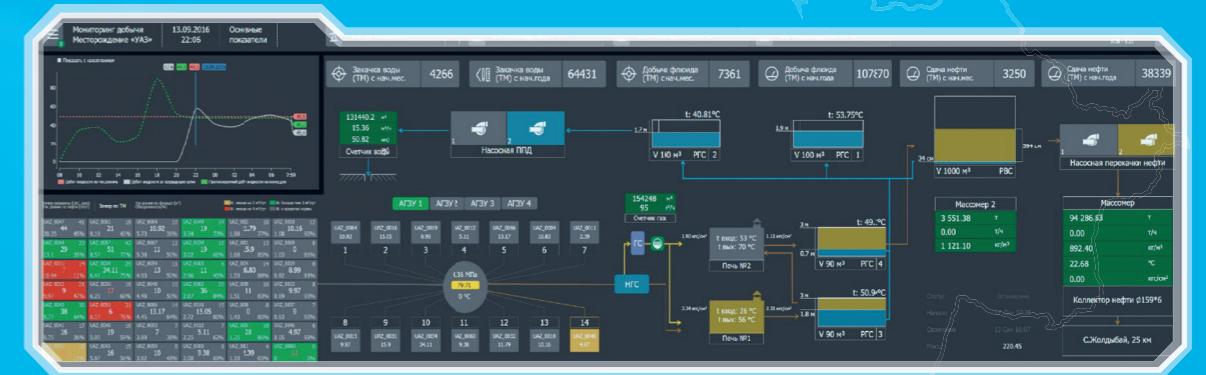
Oil Transportation and Delivery

OIL PUMPING MONITORING

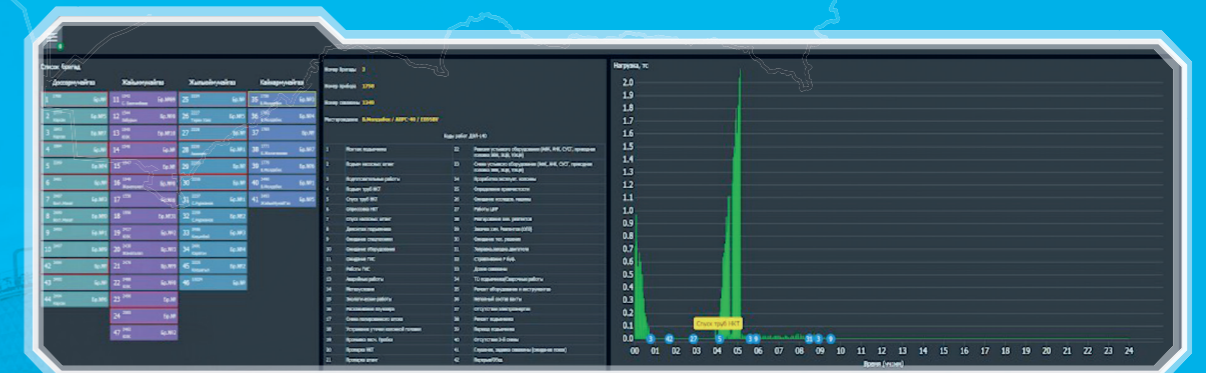
The Production Fluid Pumping Monitoring Unit allows online monitoring of delivery of crude oils from the metering stations.

SYSTEM INTERFACE:

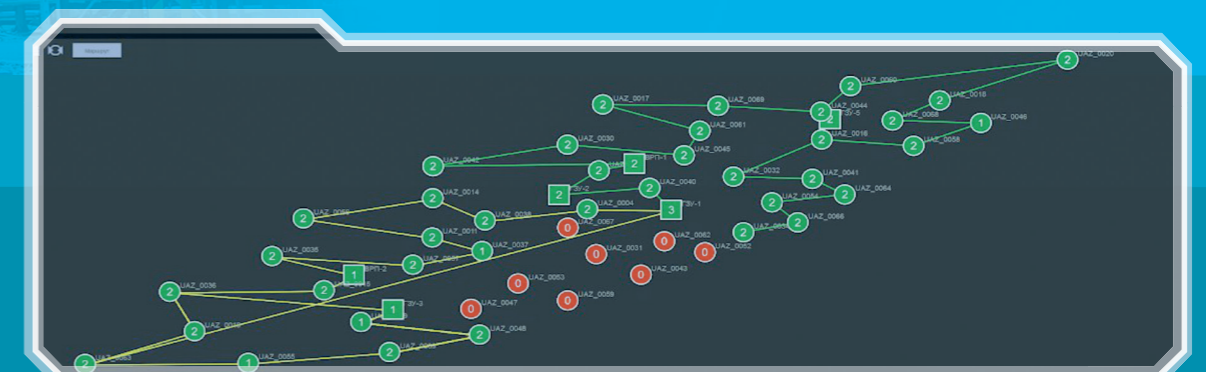
Process Flow Monitoring Module



Well Servicing Monitoring Module



Well Round Check Module



DIGITAL EMBAMUNAI GAS

SMART CONTROL STATION

Smart Control Stations VLT SALT Danfoss installed give an opportunity of remote control and obtaining the following signals:

- ▶ Pumpjack smooth start
- ▶ Electric motor automatic turning on/off
- ▶ Smooth and continuous frequency control
- ▶ Parameters measuring (current, voltage, frequency power consumption)
- ▶ Waxing/sanding detection
- ▶ Pumpjack balance control through graphic imaging of motor torque



Production

- ▶ Smart oscillation frequency adjustment by the pump priming factor
- ▶ Automated bringing the well on to stable production



DIGITAL EMBAMUNAL GAS

WELL PRODUCTION MONITORING

The Production Monitoring Module introduced to the Smart Field system allows specialists to monitor production processes online and obtain information on such parameters as:

- ▶ Deviation of gage oil well fluid production from the designed operating practices
- ▶ Oil treatment operating procedure
- ▶ Well shutdowns and shutdown losses
- ▶ Forecasting fluid/oil production at the end of the day depending on the dynamics of current production changes
- ▶ Balance between gage and field fluid/oil production



Production Monitoring



DIGITAL EMBAMUNAI GAS

WELL SERVICING TEAM MONITORING

The Well Servicing Team Monitoring Module introduced to the Smart Field system allows specialists to monitor online progress of servicing performed by the teams:



Well Repairs

- ▶ Well servicing team performance monitoring
- ▶ Reduced shutdown time due to operating supervision of the well servicing teams
- ▶ Reduced total time for well servicing
- ▶ Ensuring occupational safety through continuous monitoring of tripping operations



DIGITAL EMBAMUNAIGAS

OIL TREATMENT MONITORING

The Oil Collection and Treatment Monitoring Module introduced to the Smart Field system allows specialists to monitor production facilities online and obtain information on such facilities as:

- ▶ Oil level in VST
- ▶ Gas oil separator
- ▶ Settling tanks
- ▶ Fluid level with phase separation (oil and gas) in HST; fluid temperature
- ▶ Preheaters



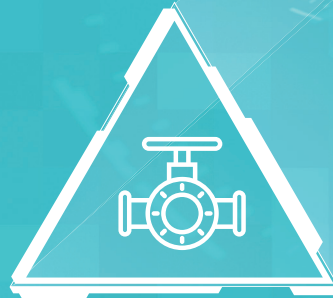
Oil Collection and Treatment



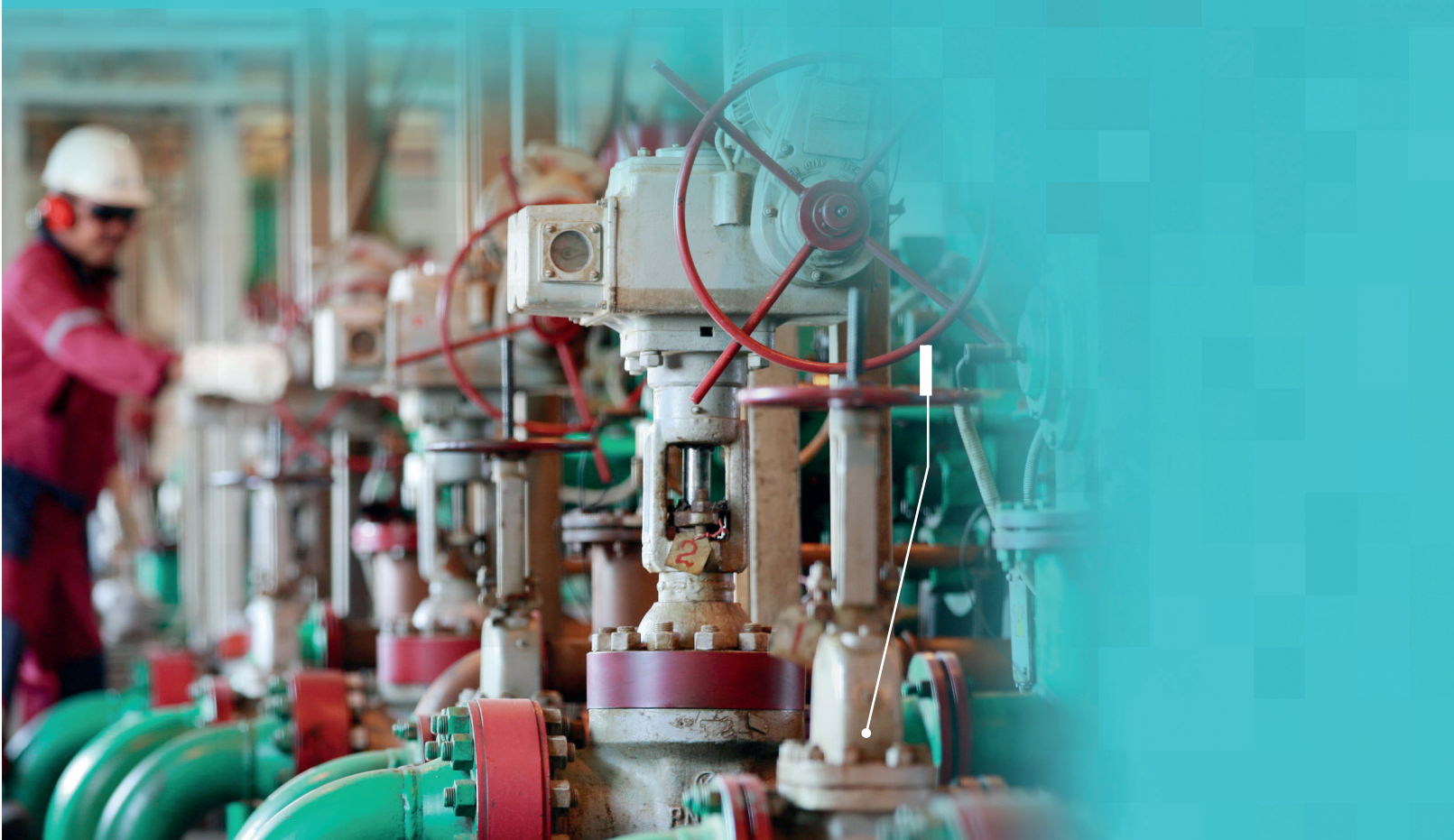
DIGITAL EMBAMUNAI GAS

OIL PUMPING MONITORING

The Well Product Pumping Monitoring Module introduced to the Smart Field system allows specialists to obtain online information on crude oil delivery from metering stations.



Oil Transportation
and Delivery



DIGITAL EMBAMUNAI GAS

TRANSPORT MONITORING

The Satellite Monitoring System Wialon introduced allows specialists to monitor transport online, including comprehensive analytics and reports for end users:

- ▶ Leaving specific geofences
- ▶ Distance report
- ▶ Speed monitoring
- ▶ POL consumption



GPS

