

Domain expertise with digital enablement: Transforming the way we work, from subsurface characterization to production operations

Stephen Warner

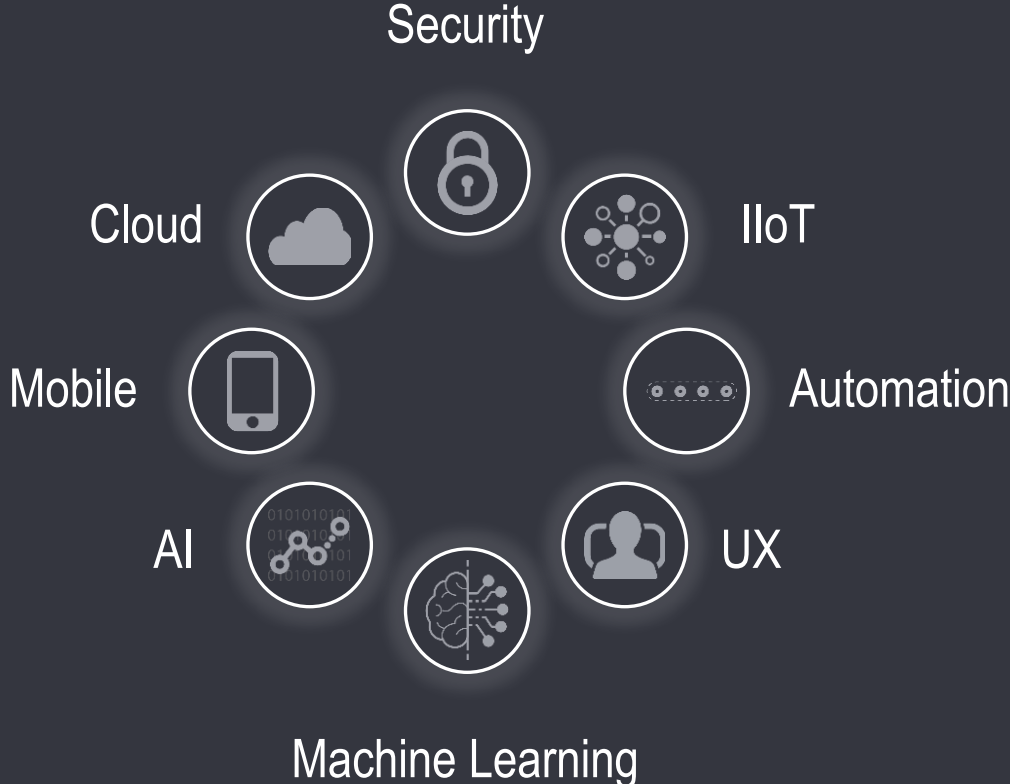
Western Hemisphere Technical Manager Schlumberger Software



Schlumberger-Private

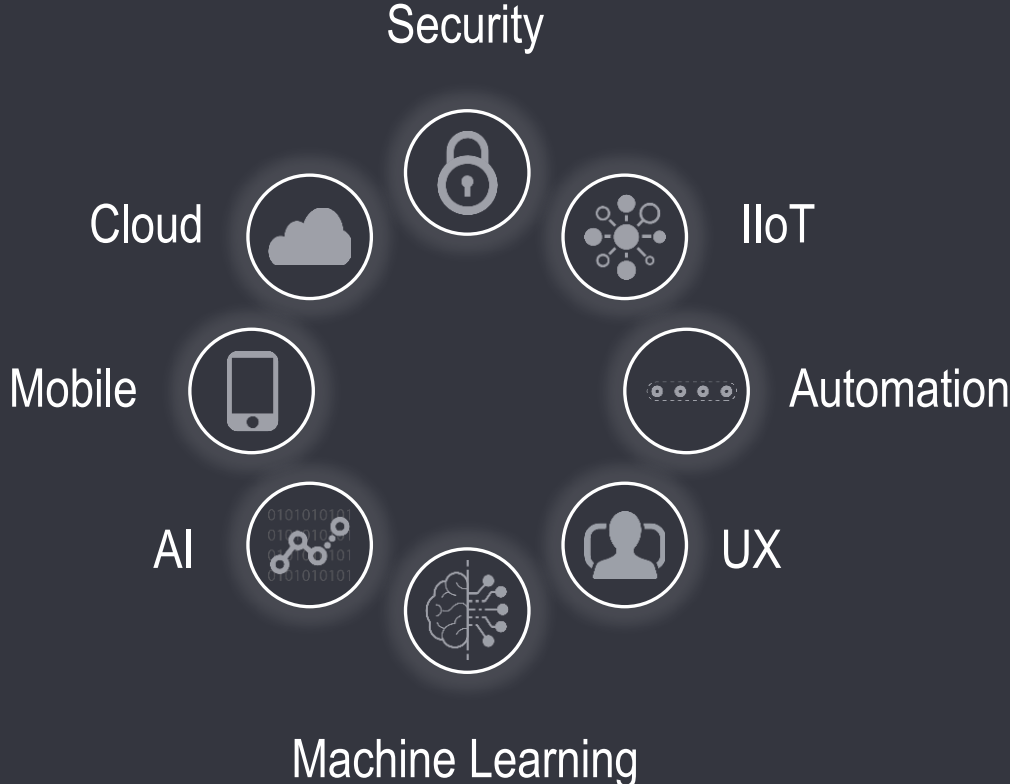
Schlumberger

Digital Technology Ecosystem



Digital Technology Ecosystem

SOFTWARE TECHNOLOGY
INNOVATION CENTER



SCHLUMBERGER LIMITED
INDUSTRIAL INTERNET CENTER



Digital Technology Ecosystem



Digital Technologies

Domain

Industry Goals



D DELFI

Cognitive E&P Environment

Secure

Data Centric

Extensible

Collaborative

Personalized

Scalable

Automated





Casing Integrity

Coherency



Burst



Collapse



Tension



Compression



VME



Buckling

17.5 IN

17.5 in 0-900 ft Drilling



Torque & Drag Hydraulics EDI Jar Placement

Max HookLoad 138.89 klbf Max Torque 10.00 kft.lbf Stress 24510.31 psi Buckling No

12.25 IN

12.25 in 900-3500 ft Drilling



Torque & Drag Hydraulics EDI Jar Placement

Max HookLoad 213.62 klbf Max Torque 14.19 kft.lbf Stress 73917.41 psi Buckling No

8.5 IN

8.5 in 3500-6500 ft Drilling



Torque & Drag Hydraulics EDI Jar Placement

Max HookLoad 192.46 klbf Max Torque 18.18 kft.lbf Stress 34706.53 psi Buckling No

8.5 in 6500-8040 ft Drilling



Torque & Drag Hydraulics EDI Jar Placement

Max HookLoad Max Torque Stress Buckling



WELLS



ASSET OVERVIEW



SETTINGS

WELLS RANKED BY

Oil Production Offset

Last Updated: 9/1/2017, 11:40:00 AM

D007-8 -1,756 bbl/d

Action needed (4 Insights)



D007-2 -1,756 bbl/d

Action needed (4 Insights)



D007-4 -1,756 bbl/d

Action needed (4 Insights)



D007-6 -1,756 bbl/d

Action needed (4 Insights)



D007-7 -1,756 bbl/d

Action needed (4 Insights)



D007-5 -1,756 bbl/d

Action needed (4 Insights)



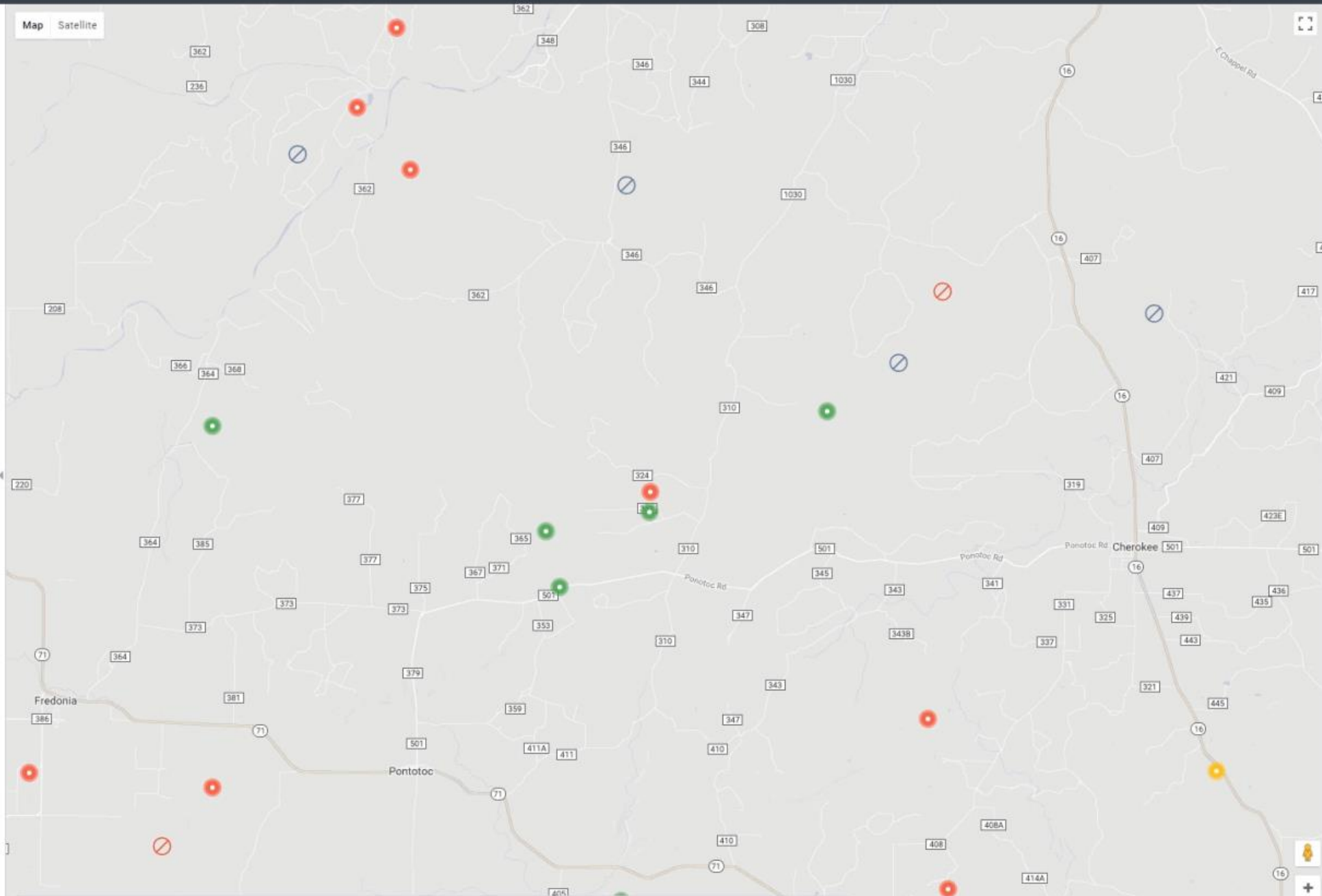
D007-3 -1,756 bbl/d

Action needed (4 Insights)



D009-8 -1,634 bbl/d

Map Satellite



Significantly Below Target Below Target On/Above Target No Production Planned Downtime Unknown

Map data ©2017 Google, Terms of Use, Report a problem



D007-8

WELLS RANKED BY

Oil Production Offset

Last Updated: 9/1/2017, 11:40:00 AM

- WELLS
- ASSET OVERVIEW
- SETTINGS

- D007-8** -1,756 bbl/d
Action needed (4 Insights)
- D007-2** -1,756 bbl/d
Action needed (4 Insights)
- D007-4** -1,756 bbl/d
Action needed (4 Insights)
- D007-6** -1,756 bbl/d
Action needed (4 Insights)
- D007-7** -1,756 bbl/d
Action needed (4 Insights)
- D007-5** -1,756 bbl/d
Action needed (4 Insights)
- D007-3** -1,756 bbl/d
Action needed (4 Insights)

PRODUCTION HISTORY



WELL TEMPERATURE & PRESSURE





WELLS



ASSET OVERVIEW



SETTINGS

WELLS RANKED BY

Oil Production Offset

Last Updated: 9/1/2017, 11:40:00 AM

D007-8 -1,756 bbl/d
Action needed (4 Insights)



D007-2 -1,756 bbl/d
Action needed (4 Insights)



D007-4 -1,756 bbl/d
Action needed (4 Insights)



D007-6 -1,756 bbl/d
Action needed (4 Insights)



D007-7 -1,756 bbl/d
Action needed (4 Insights)



D007-5 -1,756 bbl/d
Action needed (4 Insights)



D007-3 -1,756 bbl/d
Action needed (4 Insights)



D007-8

Insights

Performance

About



HIGH Hydrate formation risk
Status: Request pending

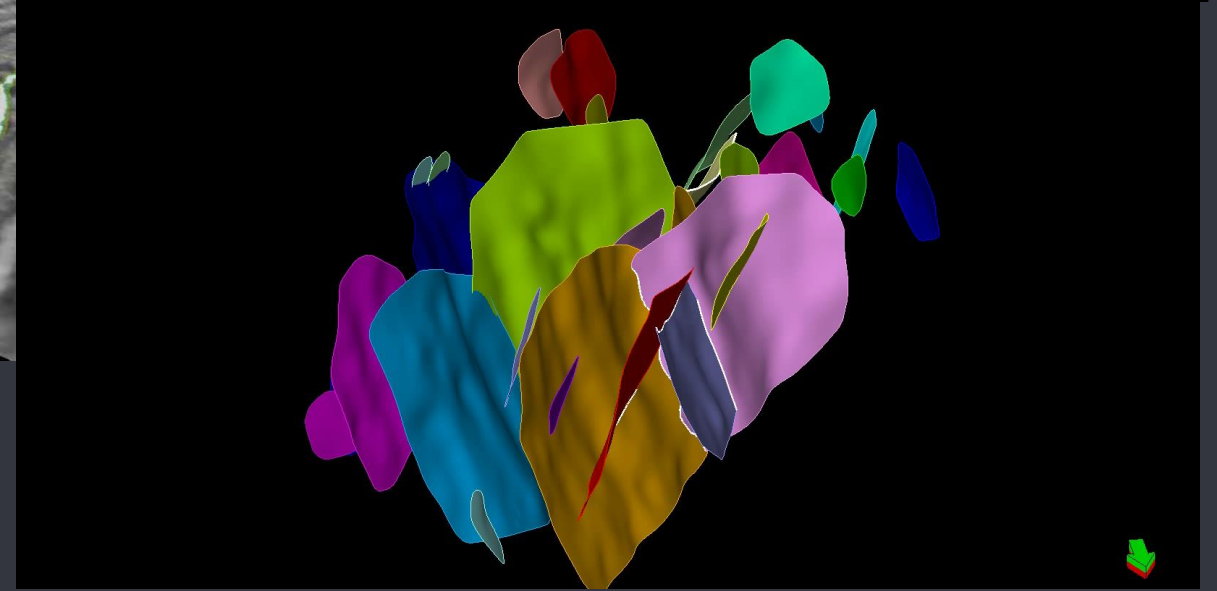
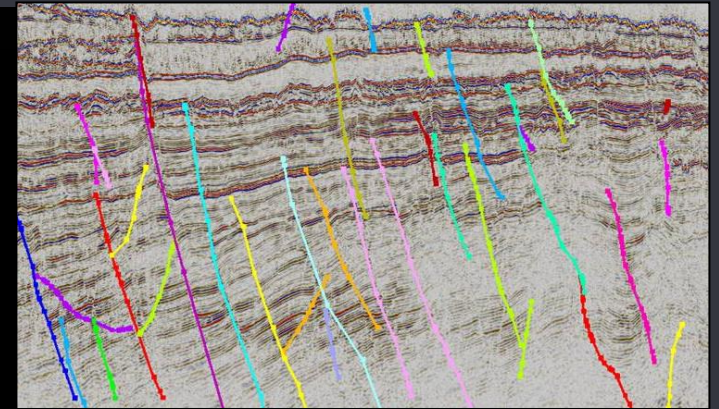
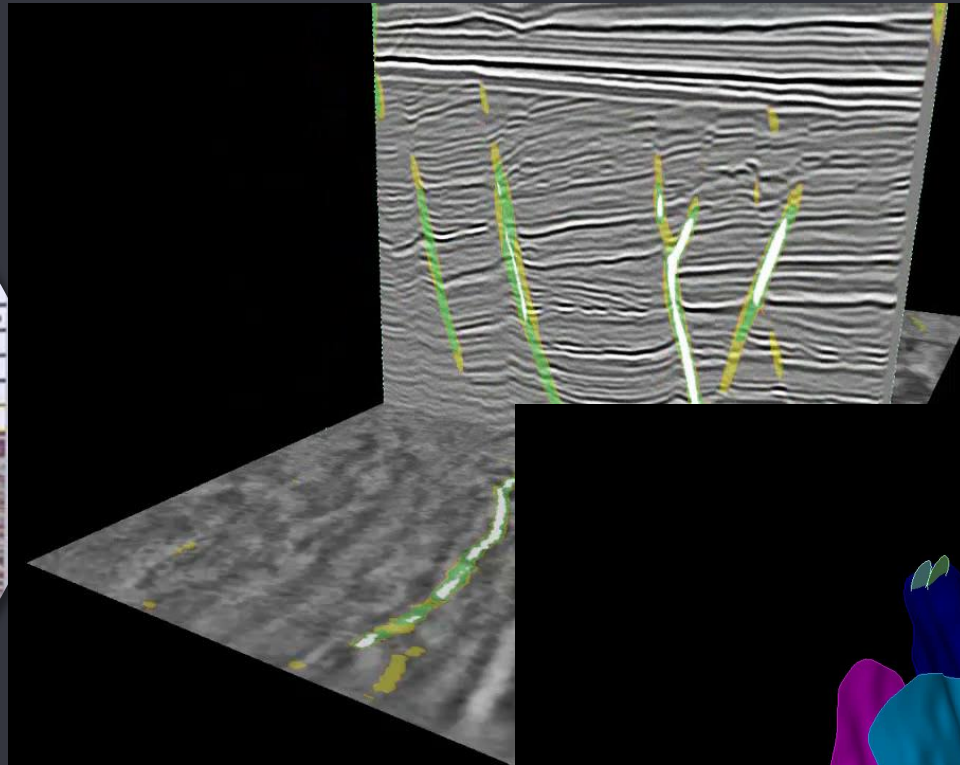
HIGH Wax deposition risk
Status: Action needed

HIGH Sand production risk
Status: Action needed

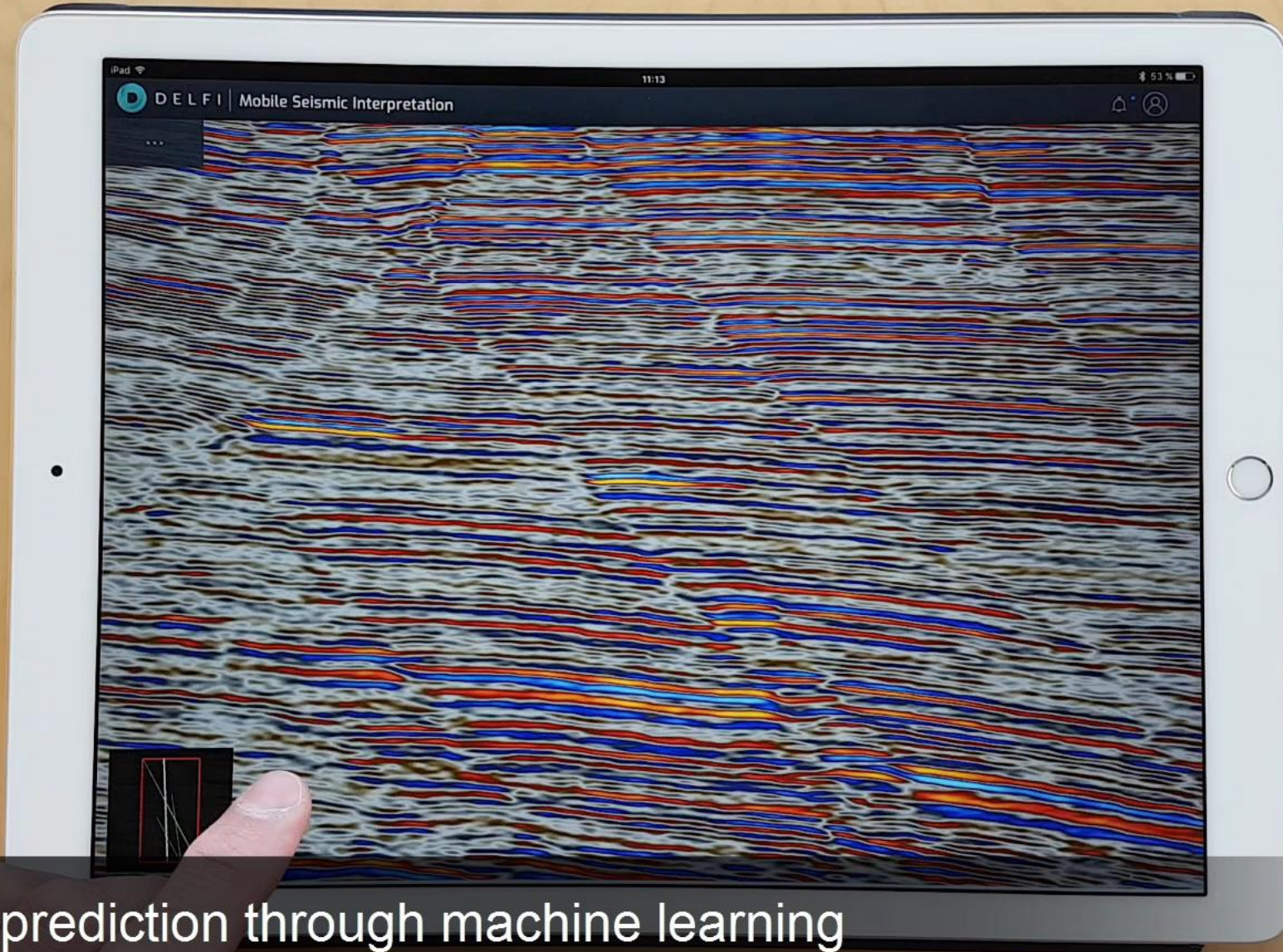
MEDIUM Water production increase
Status: Action needed

INACTIVE ISSUES (2)

Seismic Fault Interpretation



Interpretation from months to days



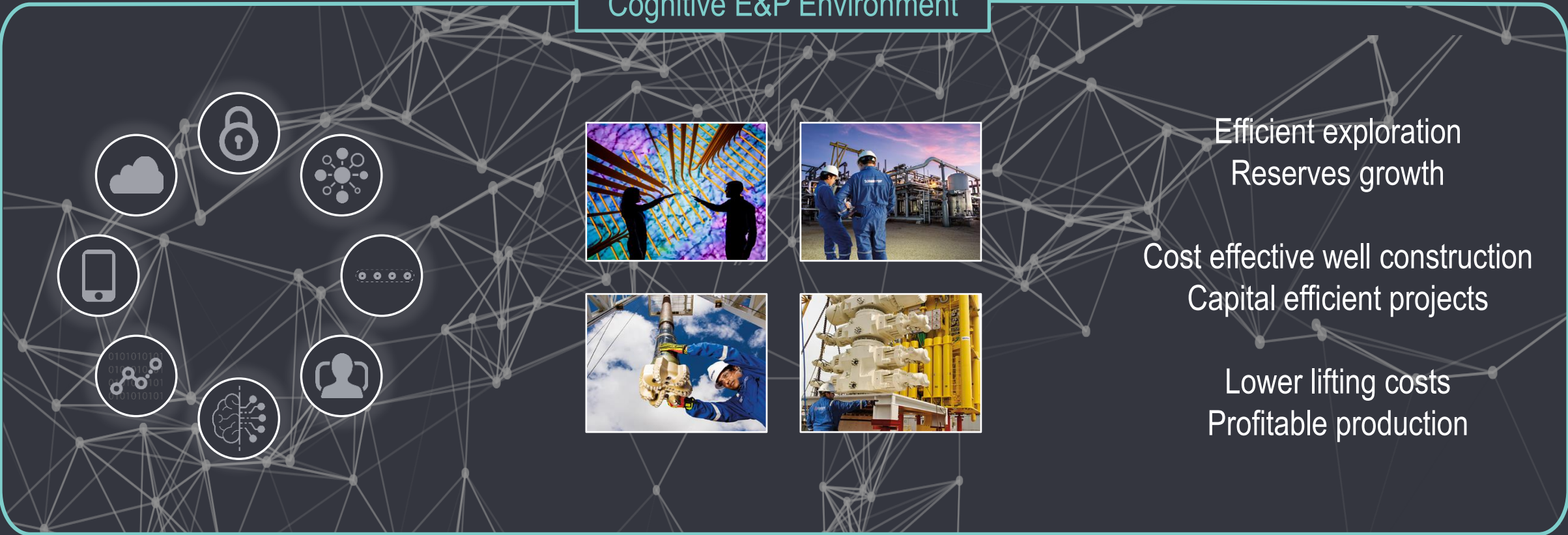
On-the-fly fault prediction through machine learning

Digital Technologies

Domain

Industry Goals

Cognitive E&P Environment



Efficient exploration
Reserves growth

Cost effective well construction
Capital efficient projects

Lower lifting costs
Profitable production