



O&G NDR Works

Use Cases on UX and Analytics Stack

NDR Solutions

01

Interactive/Real-Time Dashboards

02

NDR Analytical Reports

03

Facies Classification

04

DCA (Decline Curve Analysis)

05

Predictive Modelling on NDR datasets

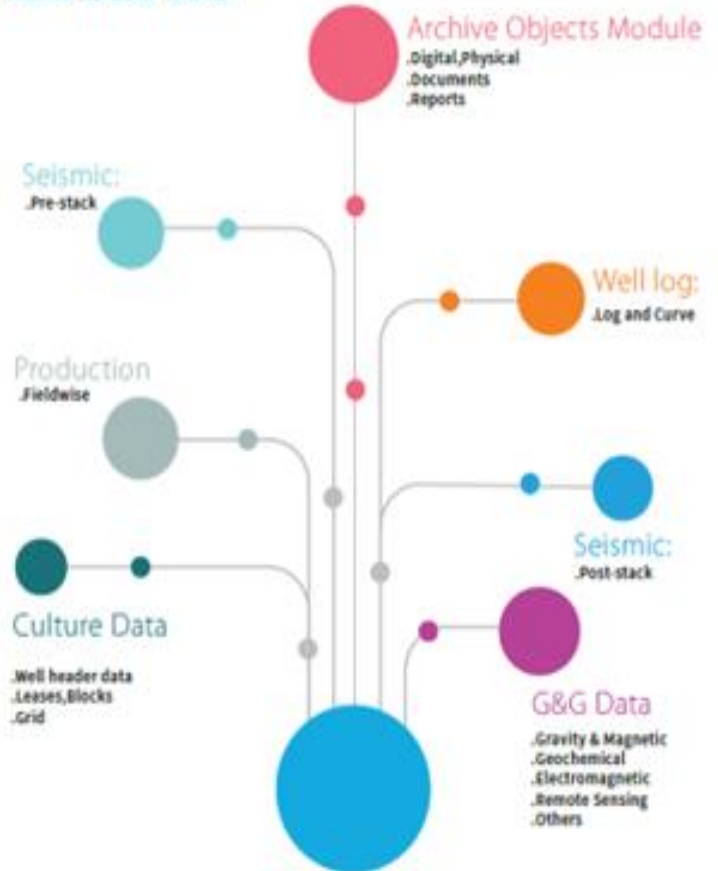
06

Deep Learning on Seismic Images



Case 1 - Building Interactive Dashboards on NDR Datasets

Typical NDR Data Sets



UKCS combined losses

Year	Losses
2016	211
2017	202
2018	196

2018 UKCS % Split of loss categories

Category	Value	Percentage
Plant Losses	138	71%
Export Losses	30	16%
Well Losses	26	13%

2018 UKCS Loss types - All losses

Loss Type	Value
TAR and/or planned shutoffs	337
Gas System	30.9
Full Plant	20.7
Oil System	16.6
Reservoir	15.0
Unplanned Terminal Outage	9.9
Power System	9.1
Planned Terminal Outage	8.0
Pipeline	7.7
Gathering System	7.3
Control System	7.3
Utility System	7.1
Wellhead	5.9
Completion	5.9
Produced Water System	5.9
Blending / Backout	5.9
Injection System	5.9

2018 UKCS Plant losses

Year	Losses
2016	126
2017	121
2018	150

2018 UKCS Export losses

Year	Losses
2016	45
2017	47
2018	30

2018 UKCS Well losses

Year	Losses
2016	37
2017	33
2018	26

2018 UKCS Loss category split by infrastructure type

Infrastructure Type	Plant Losses	Export Losses	Well Losses
Small Platform - Manned	13	0	0
Floating Hubs	43	9	0
Large Platform	28	5	0
Unmanned Platform	6	0	5

UKCS PE trend (all years)

Year	PE (%)
2008	78%
2009	72%
2010	71%
2011	85%
2012	80%
2013	84%
2014	85%
2015	71%
2016	73%
2017	74%
2018	78%

Production & potential

Year	Production (mmbbl)	Potential (mmbbl)
2017	632	839
2018	632	839

Change in PE represents +11 million bbl between 2017 & 2018

2018: 196 (23%)
2017: 202 (24%)
Change: -3.23%

PE by hubs

Quartile	PE (%)
Top	92%
Higher	92%
Lower	92%
Bottom	92%

Large platforms

78%

Small platforms - Manned

76%

Floating hubs

73%

Unmanned Platforms

54%

Overall UKCS Production Efficiency (PE) has improved for the sixth consecutive year. In 2018, PE reached to 78%, driving an increase in production for the UKCS. This 1% improvement helped to contribute an additional 11 million barrels of oil equivalent (mboe) for the year which equates to 20,000 barrels of additional production per day. 45% of total UKCS hubs achieved 80% or more PE in 2018.

Total UKCS economic production potential increased by 11mboe, due to new fields coming online, counteracting the natural decline in production of maturing fields. Actual wellhead production also increased by 5% from 2017. UKCS production losses decreased to 196 mmbbl from 202 mmbbl in 2017. Reduction in overall losses was a result of drop in well (21%) and export (26%) losses. Plant losses have increased by 14%.

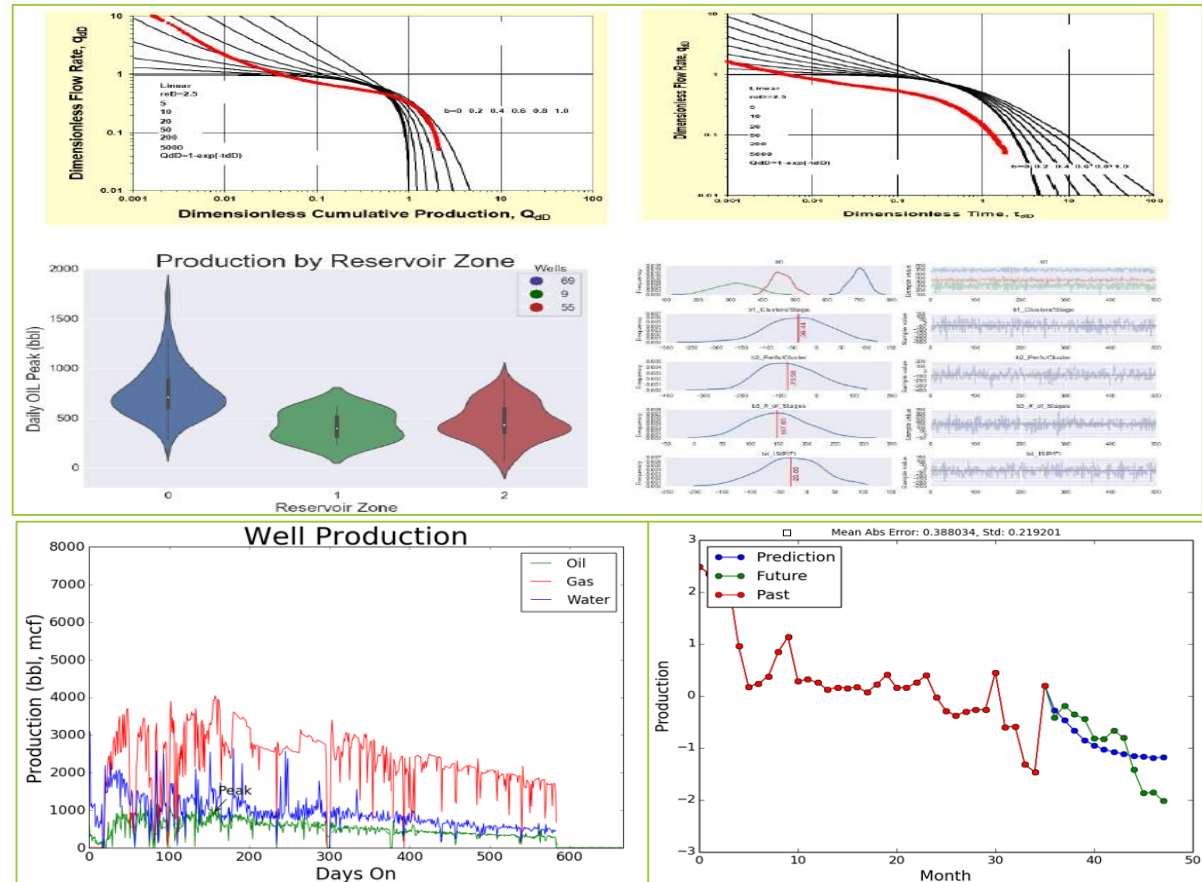
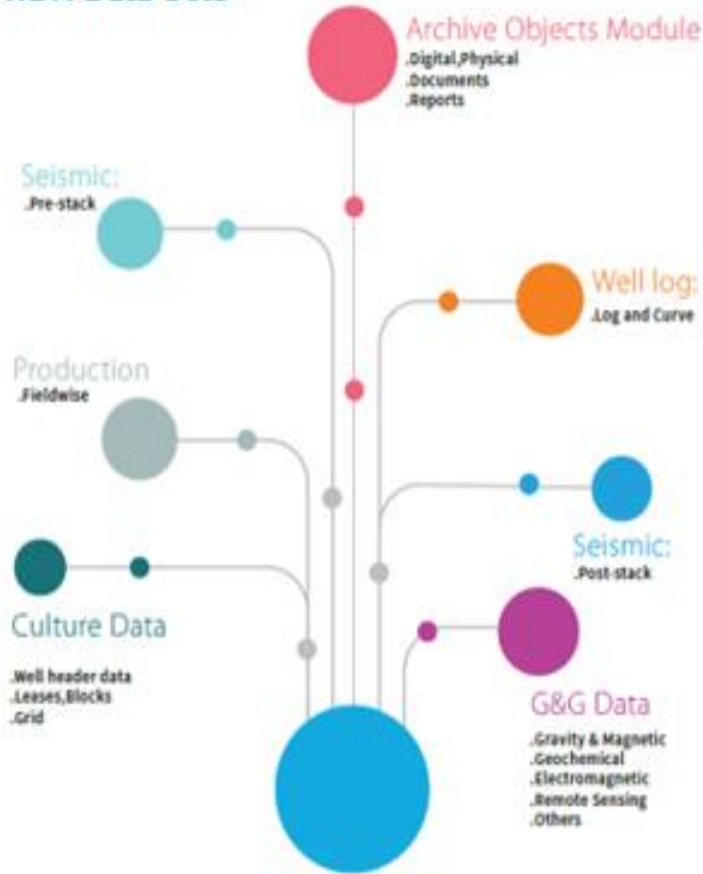
Four out of five regions increased production efficiency during 2018. Only the Central North Sea (CNS) had a PE decline of 1% point. After a significant drop in 2017, The Insh Sea (IS) showed an increase in efficiency of 17% point. The West of Shetland (WoS) continued its increasing PE trend with the second largest improvement of 5% point.

Hubs in the UKCS were shut down for a total of 2,177 days in 2018, 15% longer than planned. Over-run percentage was reduced by 53% from 2017, which shows an improved estimation by operators of planned shutdown days. 89 days of planned turnaround (TAR) was deferred into subsequent years in 2018.

Floating platforms had the greatest increase in overall PE, up 4% point from 2017. The main driver for this increase was a 13% point improvement of floating platform PE in the Northern North Sea (NNS) and WoS. Large platforms had an increase 4% point increase in PE from 2017.

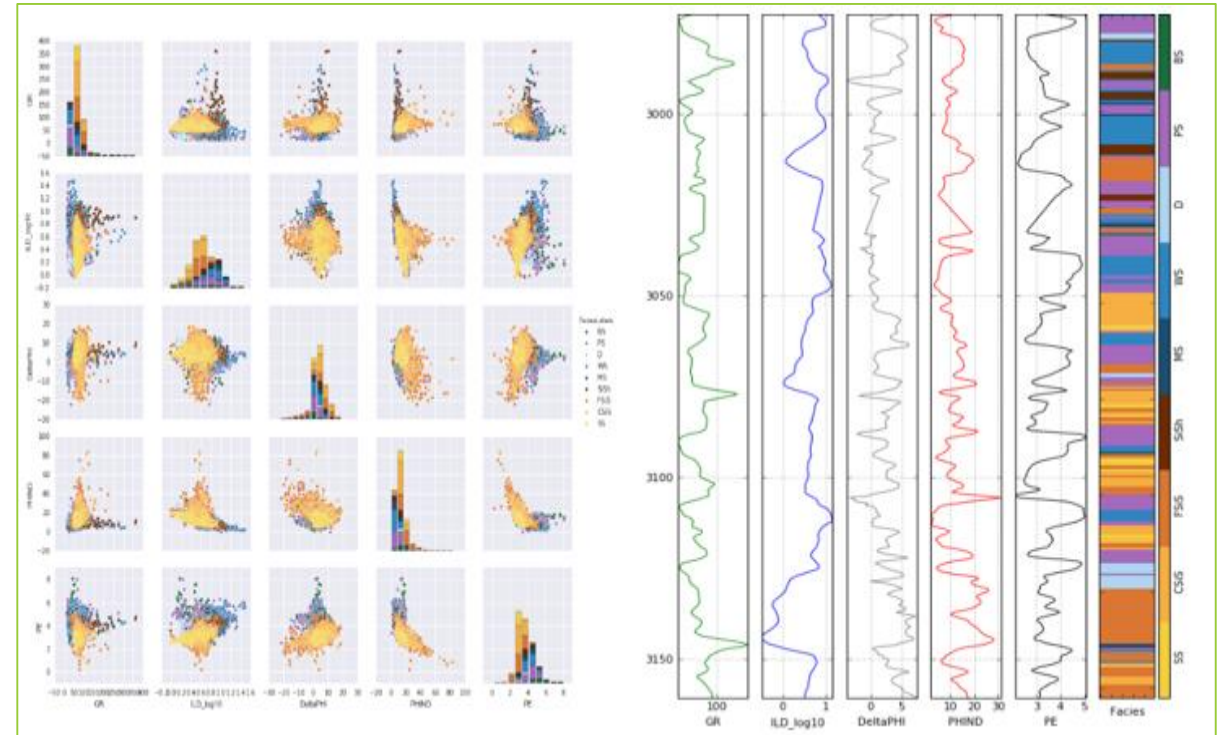
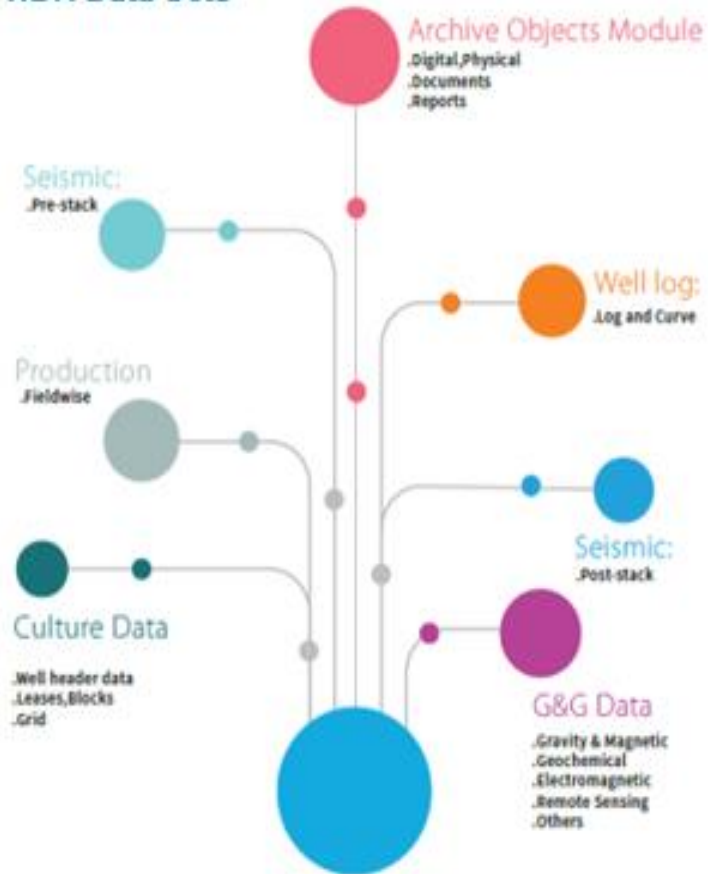
Case 2 - Building Analytical Reports on NDR Datasets

Typical NDR Data Sets



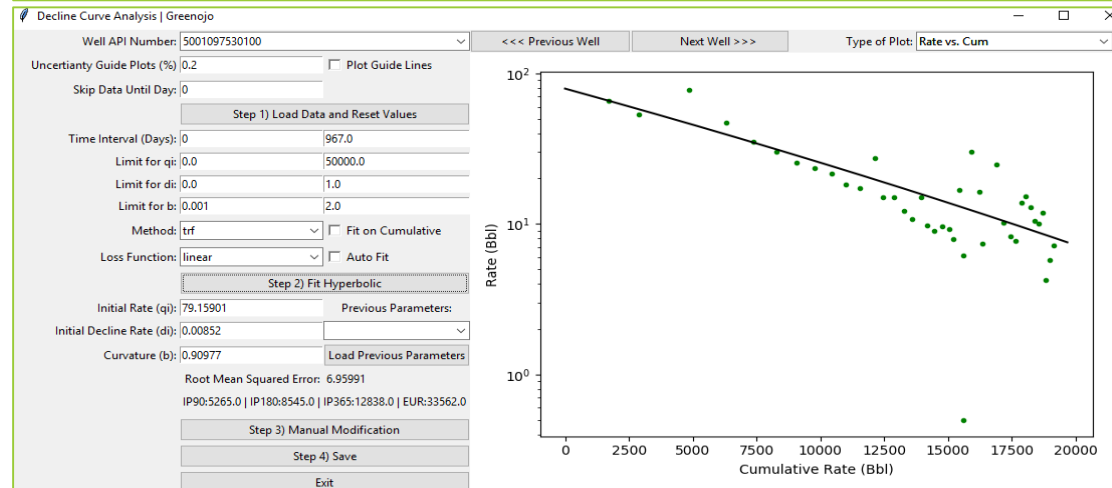
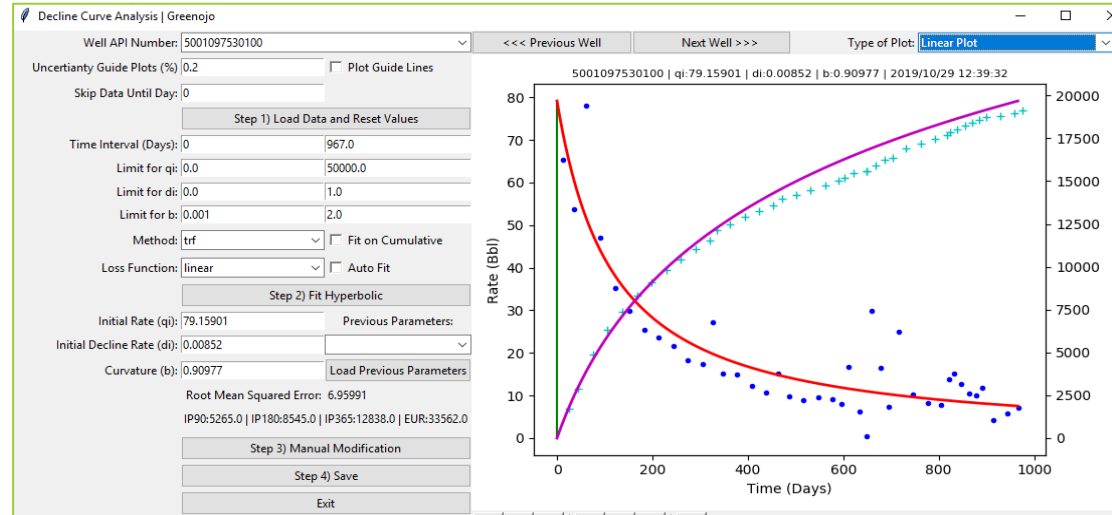
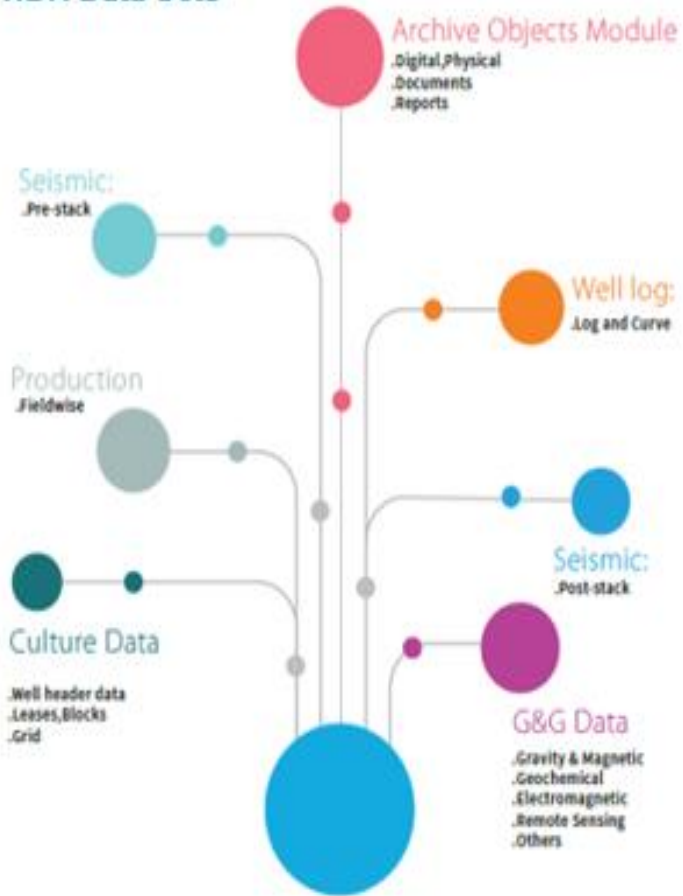
Case 3 - Building Facies Classification from Well Logs

Typical NDR Data Sets



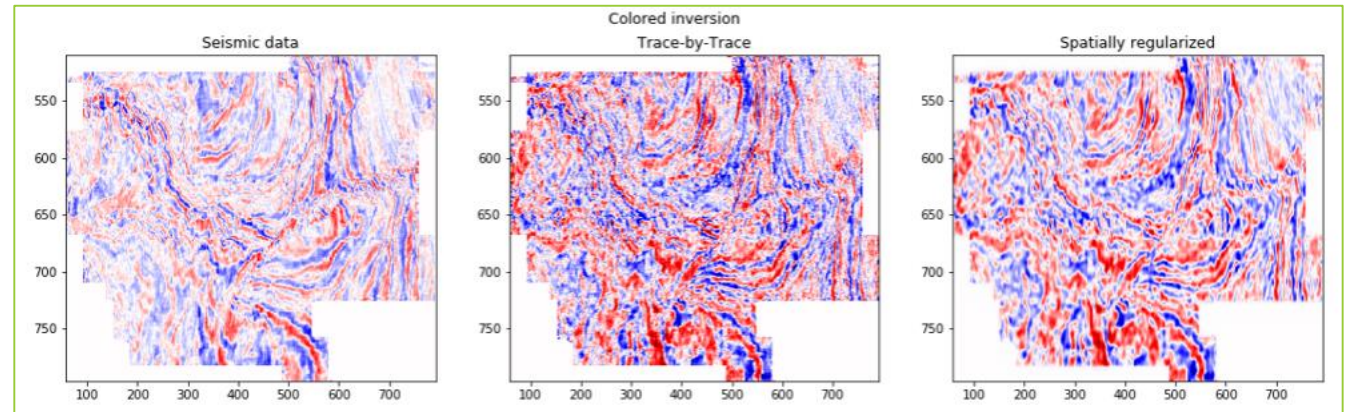
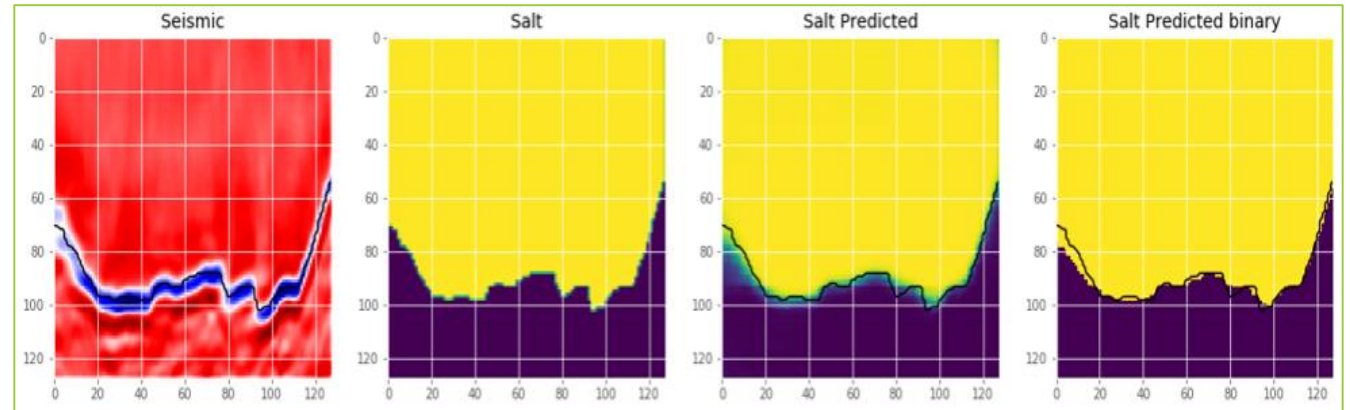
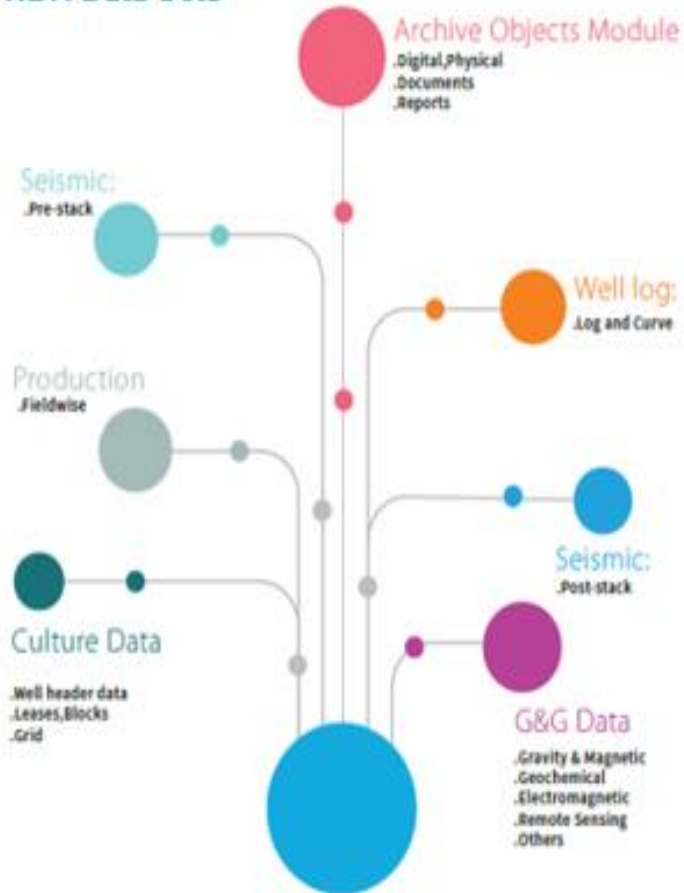
Case 4 - Building DCA (Decline Curve Analysis)

Typical NDR Data Sets



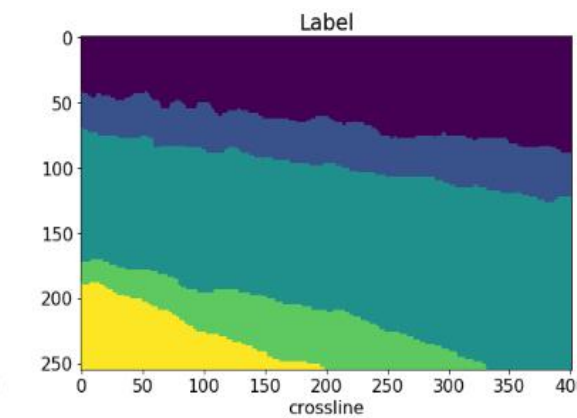
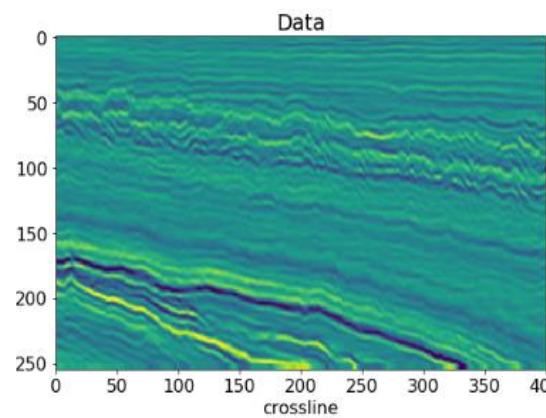
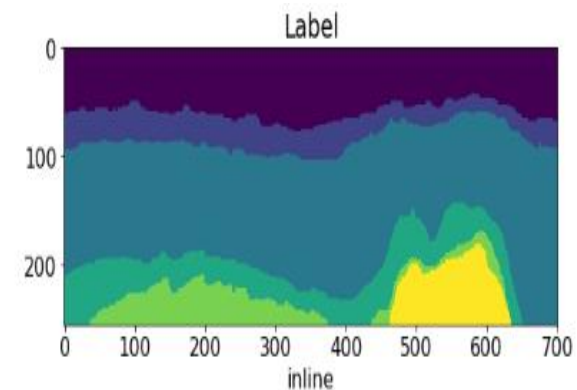
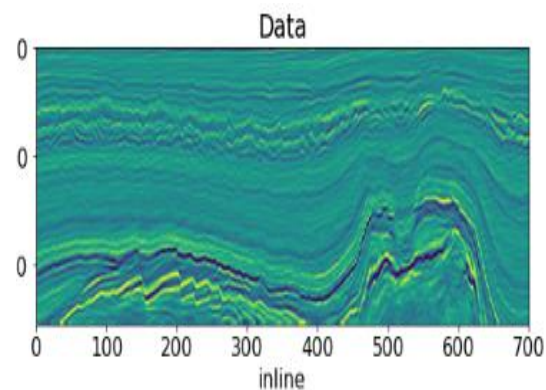
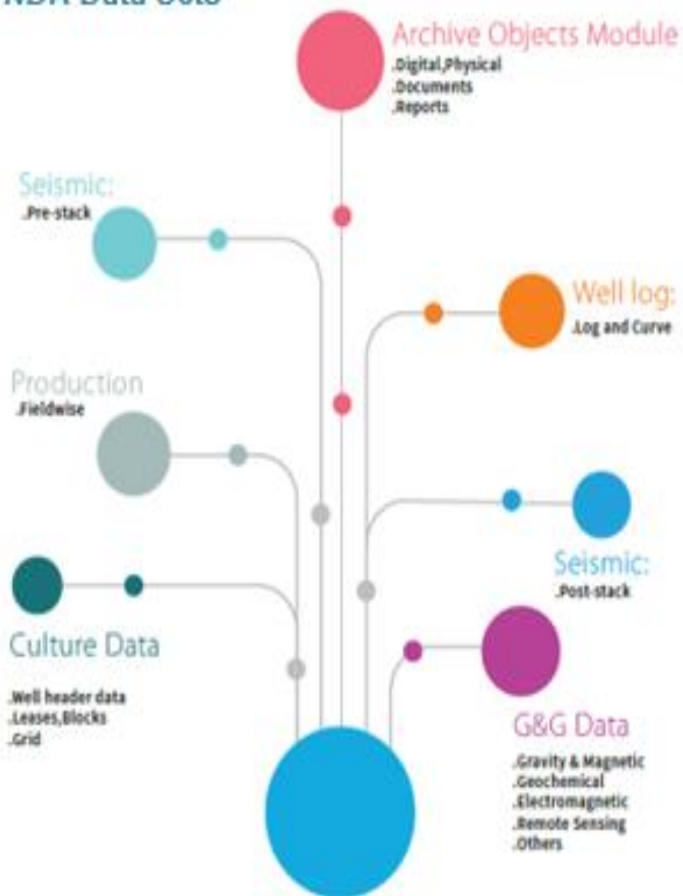
Case 5 - Building Prediction Reports on Seismic Images

Typical NDR Data Sets



Case 6 - Deep Learning on Seismic for Facies Prediction

Typical NDR Data Sets





Thank You

Greenojō provides Automation, Analytics and AI solutions to
enterprise customers

Sales Offices

Houston, TX, USA | Burlington, ON, Canada | Dubai, UAE | Lagos, Nigeria

For RFPs, Solutions and Sales/Partner
enquiries, connect us at - sales@greenojō.com

Delivery Offices - India

Bhubaneswar, Odisha | Hyderabad, Telangana | Trivandrum, Kerala