



# DIVERSE REQUIREMENTS ONE PLATFORM

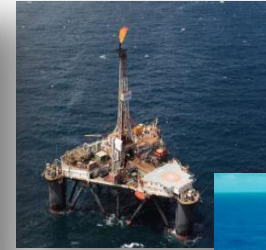
Presented by Rubin Boer  
Senior Business Analyst/Architect



# Agenda

- About PetroSA
- Business Requirements
- Applications and Use Case / How our PI System was Applied
- How Individual Product Capabilities Solved the Business Challenge
- Results Obtained and Business Impact
- Conclusion

# PetroSA Overview



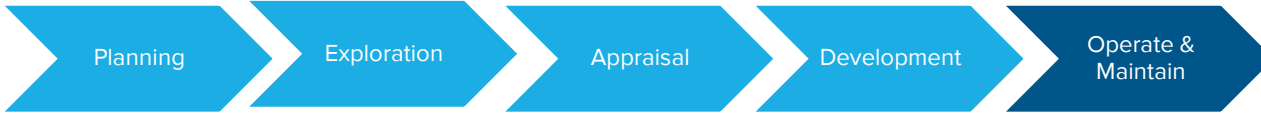
- Established in 2002, PetroSA owns one of the world's largest GTL refinery.
- Multiple years of experience in developing and operating gas infrastructure.
- Business spans petroleum value chain
- Produces diesel, gasoline, kerosene and specialty products
- Has produced ~70 MMbbl crude oil & 1 Tcf of natural gas to date.
- Has upstream presence in South Africa, Equatorial Guinea and Ghana.

# Business Requirements

- Simplify
- Automate
- Notify
- Visualise
- Consistently
- Securely
- Centrally

# Business Requirements (Upstream)

## Upstream **Business Model**



## Operating Model

- Asset Health Monitoring
- Performance Monitoring
- ...

### Information gathering method ( PI UDS / Historian)

- Extract information from **PI DataLink (PI DL)**
- Tags are referenced
- Analysis is static embedded in Excel
- Visualization in Excel or **PI ProcessBook (PI PB)**
- Diverse & Local

## Key **Performance** Indicators

- Process to deliver as defined
- Competencies

### Information gathering method ( PI System Context Model AF)

- Asset Model defined in **Asset Framework (AF)**
- Dynamic & **Real-time Analysis**
- Analytic Rich Visualization

# Business Requirements

Rethink the way we utilize the PI System

Change the conversation with business

- No longer a **historian** storing process information only
  - A **platform** that answers questions to your problems
- No more Excel sheets representing Assets and direct **tag** references
  - A **modelling** environment representing a **logical asset infrastructure**
- No more **static** rules/analysis/algorithms with **localised** awareness
  - A **dynamic, real-time, always-online, operational intelligence repository**
- It a **business conversation** not a technical one
- Changing the business's view of the PI System requires standing in business's shoes
- It's a conversation
  - from I **want** the **PI Tag** for that flow,
  - to "Can the **PI System** do that?"
  - and then I **need** my information from **AF**.

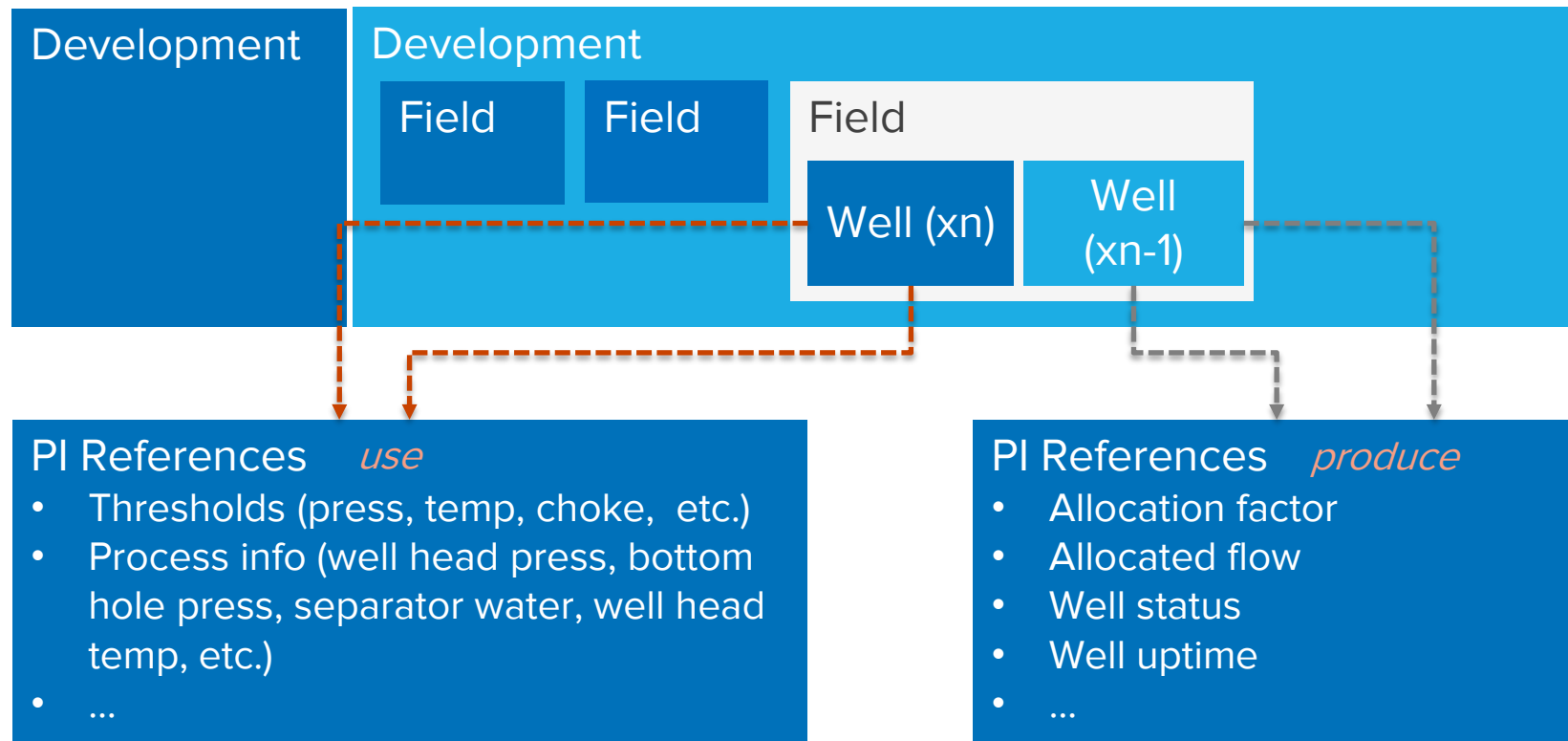
# Business Requirements

- Simplify – PI System (AF)
- Automate – PI System (AF)
- Notify – PI System, Microsoft (AF, Exchange, Lync)
- Visualise – PI System, Microsoft (PI DL, PI PB, SP)
- Consistently – PI System (AF)
- Securely – PI System, Microsoft (AF, PI Data Archive, AD)
- Centrally – PI System (AF, PI Data Archive)

We Have You Covered Business

# Well Monitoring

## High Level Model







Presented by

# Well Monitoring

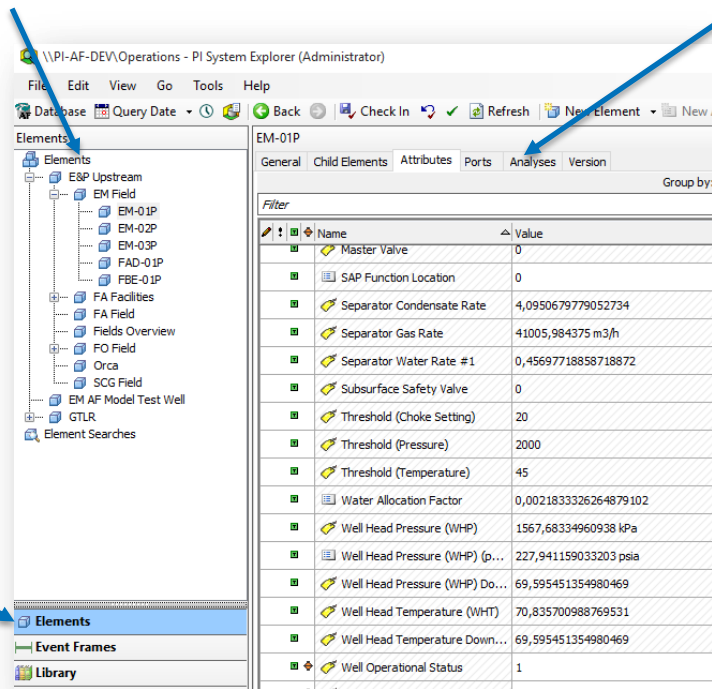
Automated business rules (Analyses)

Simplification by standardization (Elements)

Consistent & Repeatable  
(Library, Templates)

Centrally &  
Securely  
(AF & Microsoft AD)

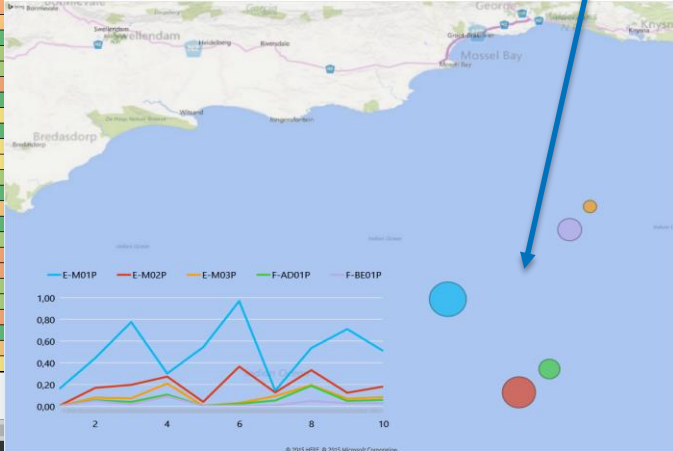
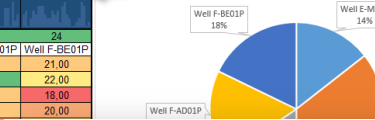
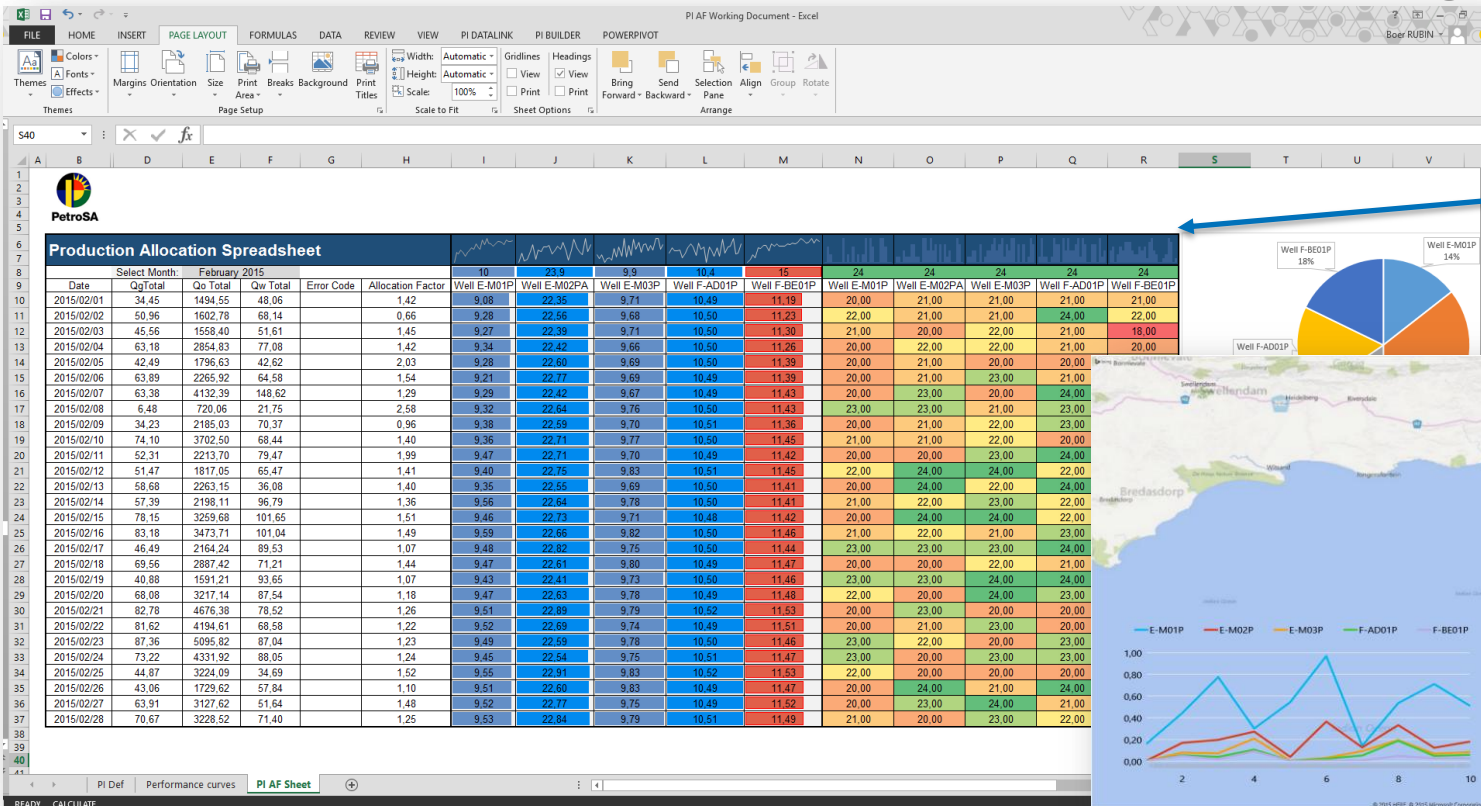
Real-time Analytics  
Various variables  
Event driven  
Well Health / Performance  
On-Demand



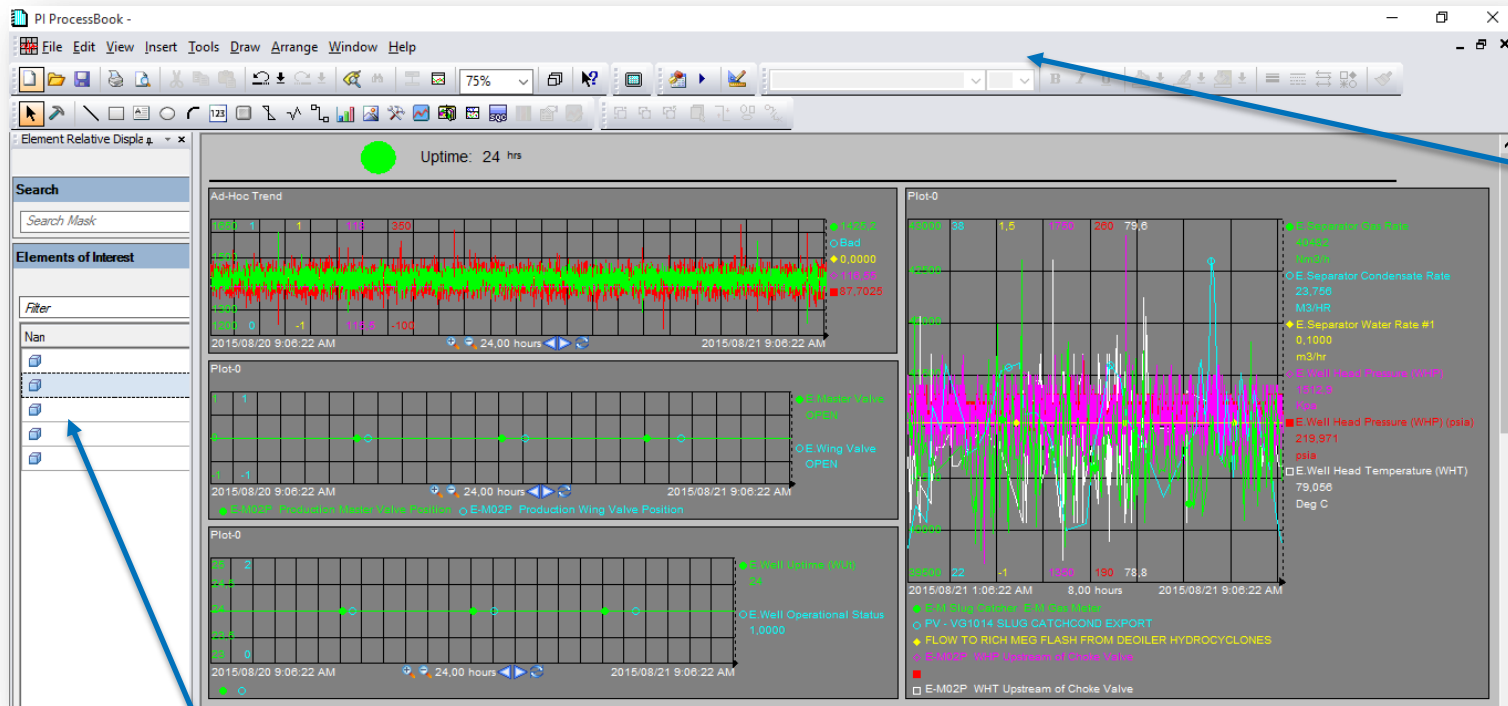
# Well Monitoring

Well performance overview, contextualized at a glance

Visualization  
(PI DataLink  
SharePoint)



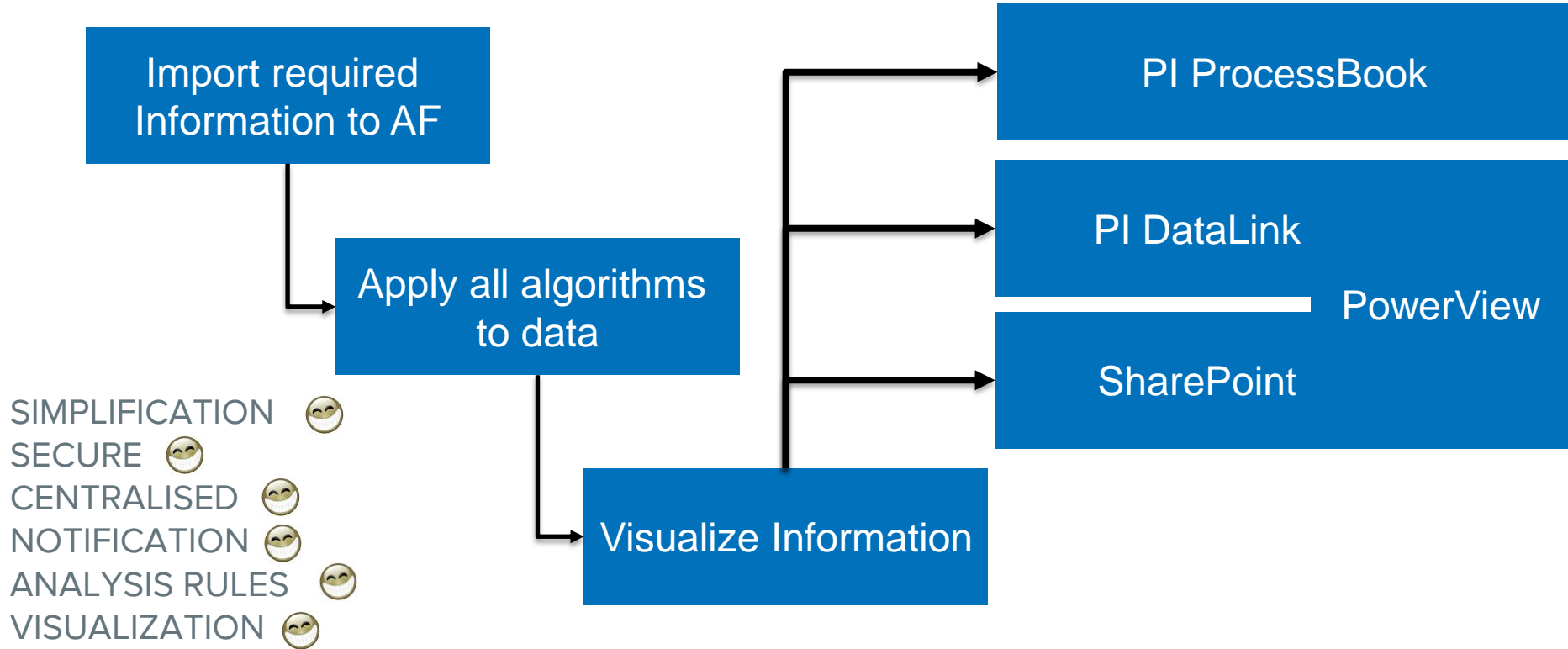
# Well Monitoring



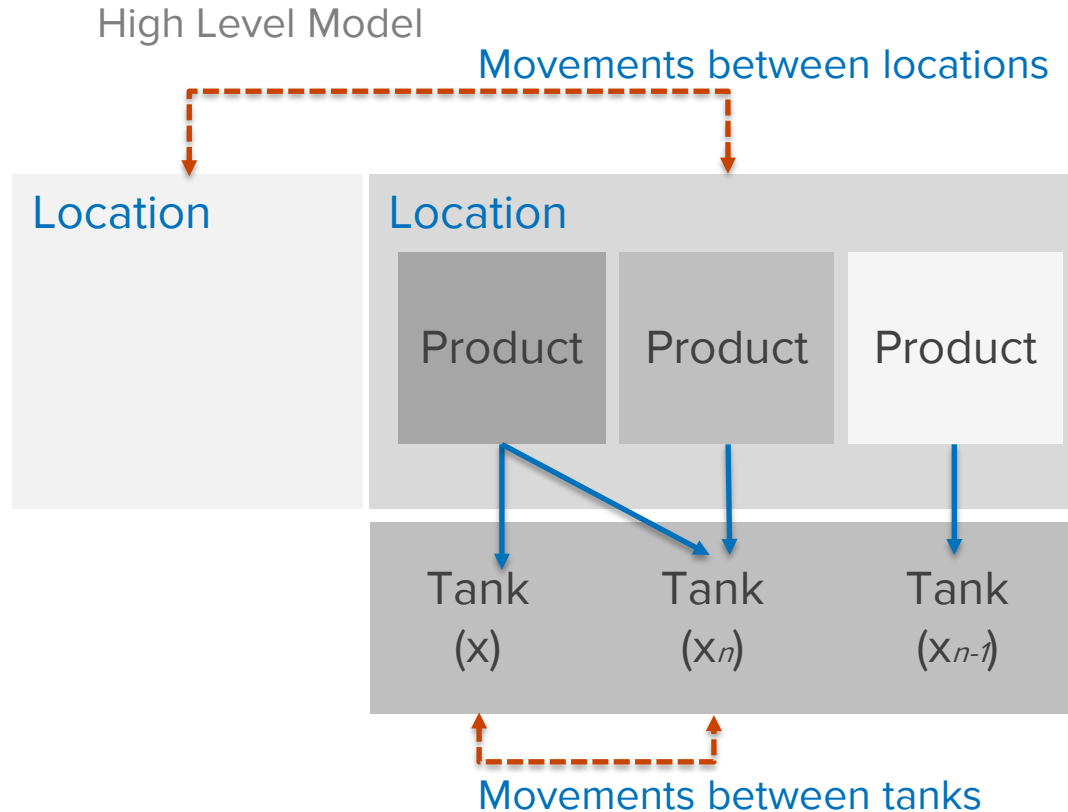
Visualization  
(PI PB)

Consistent & Repeatable  
(Element Relative)

# Well Monitoring



# Production Accounting



# Production Accounting

Lot Name	Level	Level	Temperature (PIE)	Temperature	Density
SLO	MLP000	ESL0000 MI	MLP000	ESL0000 MI	MLP000
SLO					
Oil					
Oil					
Condensate					
SLO					
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# Production Accounting

Simplification by standardization (Elements)

Automated business rules (Analyses)

Elements

Unit51

- 51TK101A
- 51TK101B
- Tank Movement
- 51TK102A
- 51TK102B
- 51TK103
- 51TK106
- 51TK108
- 51TK109
- 51TK110
- 51TK112
- 51TK112A

Consistent & Repeatable  
(Library, Templates,  
Events Frames)

51TK123B

51TK124A

51TK124B

51TK125A

51TK125B

Elements

Event Frames

Library

51TK101B

General Child Elements Attributes Ports Analysis Version

Group by: ☐ Category ☐ Template

Name	Value
24hrMovement	-2,580078125 m3
Angle	75 °
Bottoms	1999 m3
Compression	0,75 %
Density	PI Point not found '\\pi01\\ATag'.
Density-LAB	No Data
Dip	True
InService	True
LabDensity	PI Point not found '\\pi01\\51:AP*K.RO'.
Level	12513,8626098633 mm
LevelPercentage	91,3420639038086 %
MaterialName	Synthol Light Oil (SLO)
MaterialNumber	50000
MaxVol	9941 m3
ML.Level	0 mm
ML.Temp	20 °C

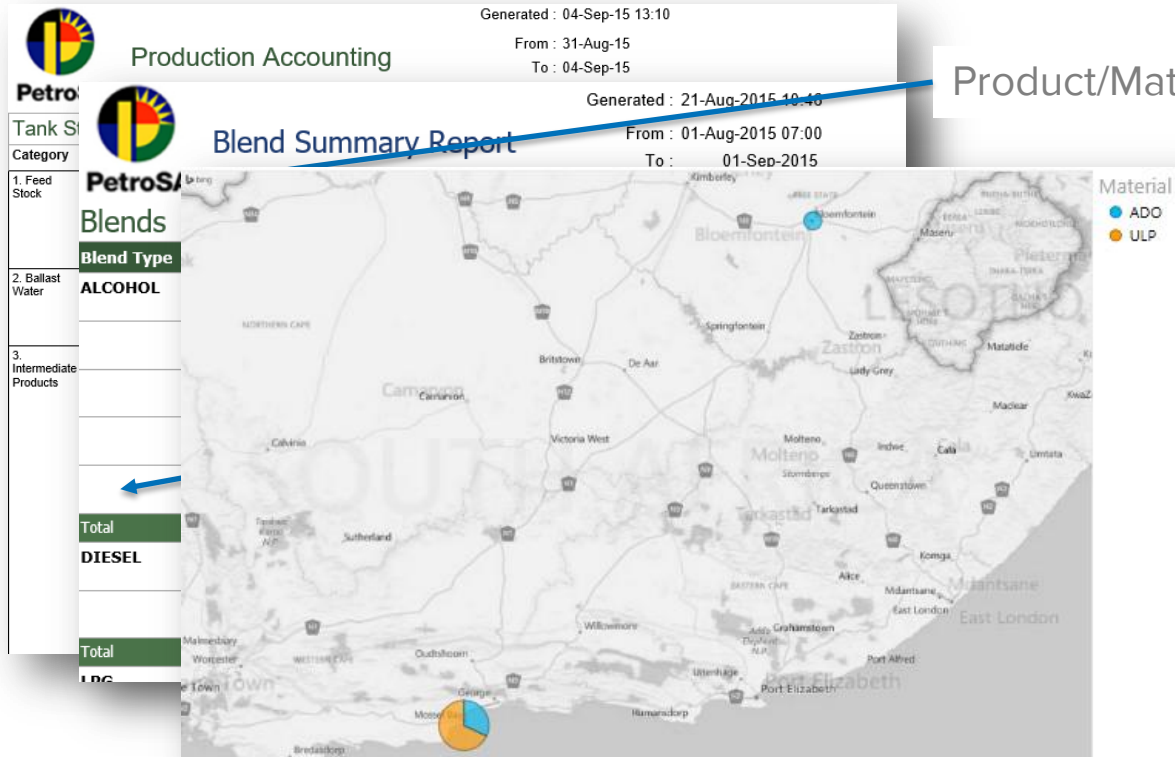
Centrally &  
Securely  
(AF & Microsoft AD)

Real-time Analytics  
Various variables  
Event driven  
Movements  
On-Demand



# Production Accounting

Production Accounting overview, contextualized at a glance



Product/Material Simplified (SAP & AF)

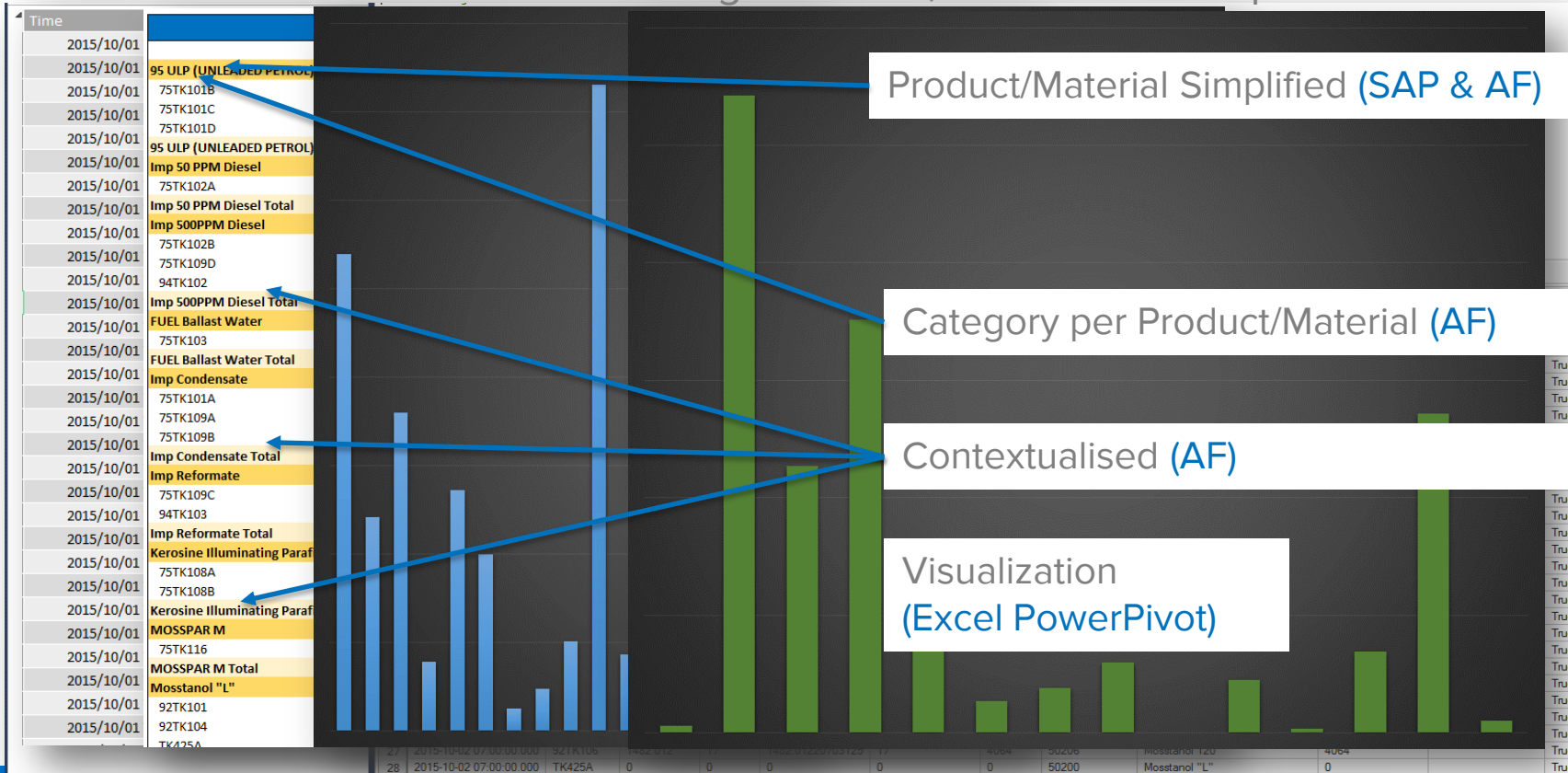
Product/Material (AF)

Product/Material (AF)

Services & PI OLEDB)

# Production Accounting

Production Accounting overview, PI OLEDB Enterprise



# Summary

The time saved utilizing the technology set, varied from days to seconds which is significant. The reality of having analysis in real-time as opposed to activated by Excel or PI ProcessBook has opened the door to many other projects, some very challenging and including huge saving opportunities to the business.



BUSINESS CHALLENGES	SOLUTION	RESULTS AND BENEFITS
<p>A. Rework and margin of error was excessive within the Production Accounting Area</p> <p>B. Inconsistency in the presentation of information (multiple values for same information)</p> <p>C. Tedious and expensive replication of services</p> <p>D. Knowledge area of new tools all the time was becoming exhaustive</p>	<p>A. Provide solutions on a principled reusable, scalable manner</p> <p>B. Reuse what was already in place, economics of scale, etc</p> <p>C. Understand the process, model it, agree to it , deliver it</p> <p>D. PI System, Microsoft, SAP</p>	<ul style="list-style-type: none"><li>• Production Accounting month-end process (720% improvement in time)</li><li>• Real-time analysis of well performance (200% improvement in time)</li><li>• Consistent information across various managerial levels</li><li>• Open the understanding of the system much more and buy-in for much more opportunistic projects</li></ul>

## *Contact Information*

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PetroSA

# Questions

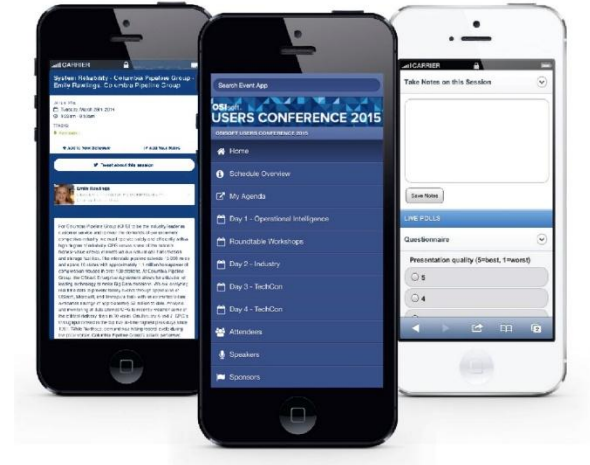
Please wait for the **microphone** before asking your questions



State your  
**name & company**

# Please don't forget to...

Complete the Online Survey  
for this session



<http://eventmobi.com/emeauc15>



감사합니다

谢谢

Danke

Merci

Gracias

Thank You

ありがとう

Спасибо

Obrigado