

FactoryTalk Analytics Platform and MES integration with the PI System Infrastructure

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**Rockwell
Automation**

AGENDA



WHY NOW, WHY ANALYTICS



DEFINING ANALYTICS – BREADED & SCOPE



FACTORYTALK ANALYTICS PLATFORM OVERVIEW



FACTORYTALK MES INTEGRATION W/ PI SYSTEM



ANALYTICS DEMO

Digital Transformation is Revolutionizing Manufacturing



Analytics Really Do Matter

- Analytics are driving Digital Transformation Initiatives
- Focused on Business Outcomes
- Using machine learning and other predictive tools
- Leveraging technology advances – IoT, Mobility
- Data Infrastructure is a critical first step

TOP 5 USES OF ANALYTICS IN THE MANUFACTURING ENTERPRISE



Sources: LNS Research, MESA

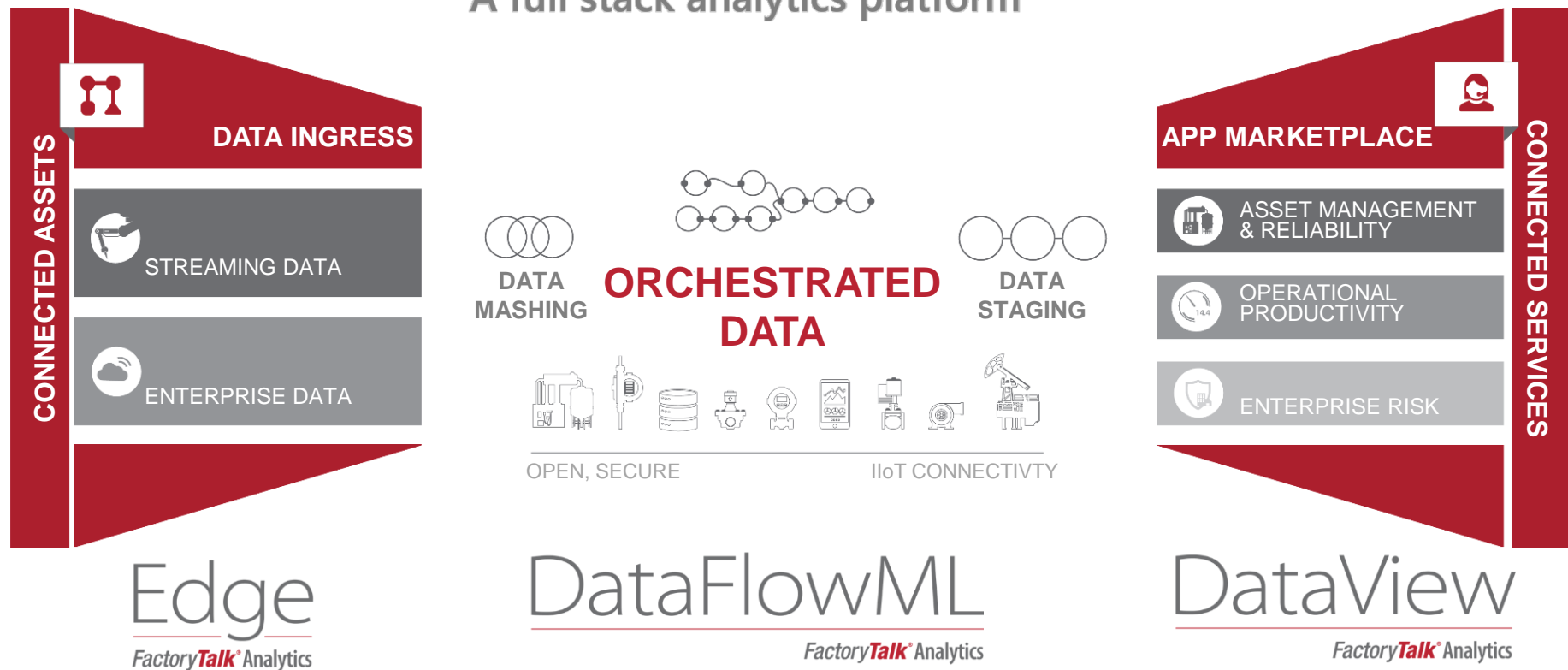
Top IIoT Use Cases



FactoryTalk Analytics Platform Overview

FactoryTalk[®] Analytics Platform

A full stack analytics platform





Edge

FactoryTalk Analytics

- Data from real-time sources. Find problems faster.
- Stores and forwards data. Nothing important gets lost due to latency.
- Enables closed loop feedback applications. Instant reaction.
- Provides advanced analytics in the “hardware stack”. Easier support.

DataFlowML

FactoryTalk Analytics

- Combines different forms of data for Analytics. No more Excel or SQL.
- Data pipelines are built using leading AI and ML tools.
- Scalable from on-premise server to cloud based infrastructures.
- Handles big data and unstructured data such as text, imagery, audio, etc.

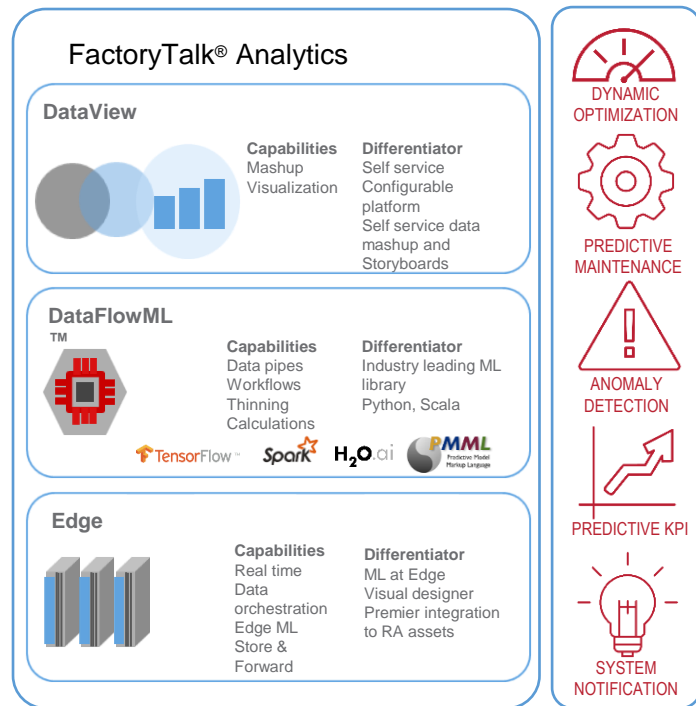
DataView

FactoryTalk Analytics

- Self-service visual analysis tool. Anyone can use it with no pre-configuration of reports or dashboards.
- AI “learns” what you want to see and adjusts accordingly.
- Insightful Storyboards may be saved and shared.
- Runs on any form factor or device.

Why FactoryTalk® Analytics Platform?

- **Scalable Platform** – Multiple applications built on a common platform allows you to buy what you need now with the ability to scale later
- **Scalable Compute** – Execute as close to the source and consumer of the data as possible including close loop
- **Open and Secure** – Leverage your investment in technology and remain platform neutral
- **Improved Time to Value** – Minimize the need of IT expertise and data scientist for repeatable tasks and applications
- **Domain Expertise** – Manufacturing Outcome and Expertise
- **Multiple ML libraries** on a common platform

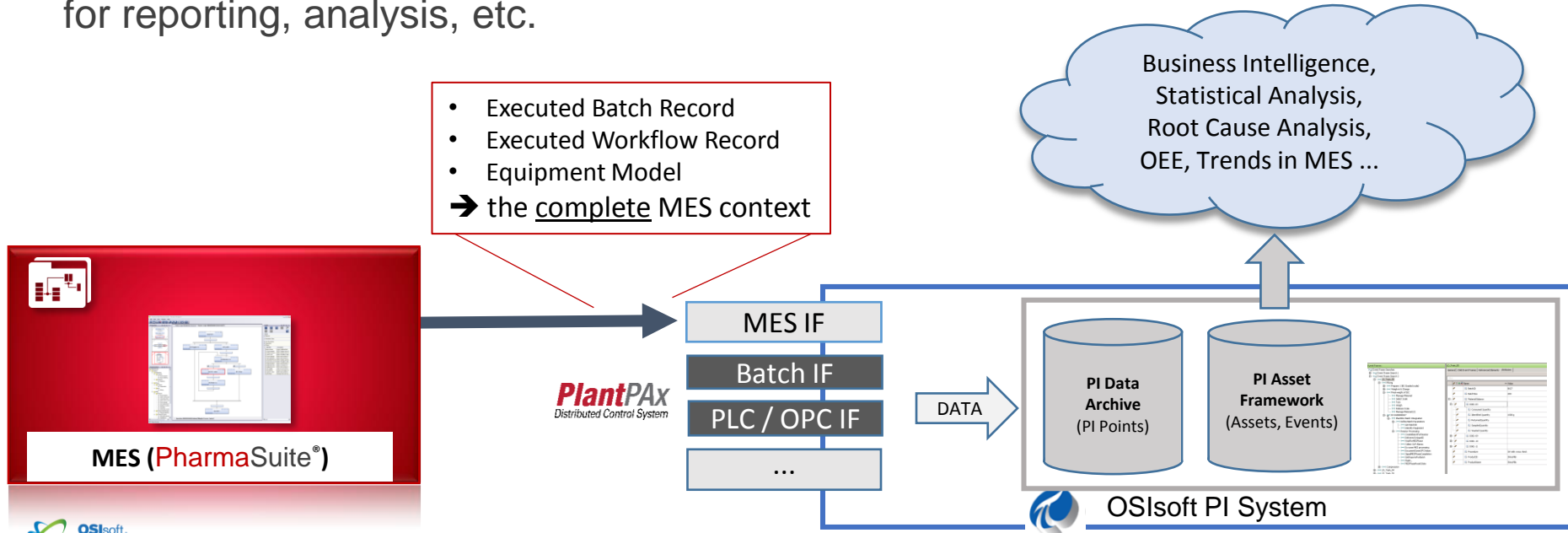


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MES (PharmaSuite) / PI System Integration

MES – OSIsoft PI System Integration

- **Objective:** Provide interface to PI System for exporting MES Equipment model to PI Asset Framework and MES Execution information to PI Event Frames
- **Customer Value:** “One version of the truth”. MES and process data combined for reporting, analysis, etc.





Equipment Model / PharmaSuite configuration

Event Frames

Event Frame Searches

Batch Production Record

RD2017061303

BX27/ControlRecipe

RD2017061303

DCS Integration Demo (U)

Define Batch Context (O)

Get Batch ID (P)

ProcessData 1

Identify Reactor (P)

001 2017-06-14T14:52:03.783+02:00

ProcessData 1

Process Documentation (O)

Get Reactor DCS Reports (P)

ProcessData 1

ProcessData 2

ProcessData 3

ProcessData 4

Collect GxP critical alarms (P)

002 2017-06-14T15:07:44.073+02:00

002-01 2017-06-14T15:07:44.117+02:00

002-02 2017-06-14T15:07:44.137+02:00

ProcessData 1

ProcessData 2

DCS Process (O)

Create Batch on Reactor (P)

ProcessData 2

ProcessData 3

ProcessData 4

ProcessData 5

ProcessData 6

ProcessData 1

ProcessData 7

Start Batch on HMI (P)

Wait for DCS MES Phase (P)

ProcessData 1

Manual Material Charge (P)

Document MES Phase Context (P)

ProcessData 1

ProcessData 2

ProcessData 3

ProcessData 4

Get Reactor DCS Reports (P)

General | Child Event Frames | Referenced Elements | Attributes

Filter

Name	Value	Time Stamp	Description
Category: ProcessParameter			
ADDITION_01:1-1:ACTUAL_01	4	6/14/2017 8:54:02.517 AM	ADDITION_01:1...
ADDITION_01:1-1:ACTUAL_01 L-H configuration	3	6/14/2017 8:54:02.517 AM	ADDITION_01:1...
ADDITION_01:1-1:ACTUAL_01 Limit definition	4	6/14/2017 8:54:02.517 AM	ADDITION_01:1...
ADDITION_01:1-1:ACTUAL_01 LL-HH configuration	3	6/14/2017 8:54:02.517 AM	ADDITION_01:1...
ADDITION_01:1-1:LOT_01	3	6/14/2017 8:54:02.517 AM	ADDITION_01:1...
ADDITION_01:1-1:LOT_01 Expected value configuration	3	6/14/2017 8:54:02.517 AM	ADDITION_01:1...
ADDITION_01:1-1:LOT_01 Expected value definition	1	6/14/2017 8:54:02.517 AM	ADDITION_01:1...
ADDITION_02:1-1:ACTUAL_01	4	6/14/2017 8:54:02.517 AM	ADDITION_02:1...
ADDITION_02:1-1:ACTUAL_01 L-H configuration	3	6/14/2017 8:54:02.517 AM	ADDITION_02:1...
ADDITION_02:1-1:ACTUAL_01 Limit definition	4	6/14/2017 8:54:02.517 AM	ADDITION_02:1...
ADDITION_02:1-1:ACTUAL_01 LL-HH configuration	3	6/14/2017 8:54:02.517 AM	ADDITION_02:1...
ADDITION_02:1-1:LOT_01	3	6/14/2017 8:54:02.517 AM	ADDITION_02:1...
ADDITION_02:1-1:LOT_01 Expected value configuration	3	6/14/2017 8:54:02.517 AM	ADDITION_02:1...
ADDITION_02:1-1:LOT_01 Expected value definition	1	6/14/2017 8:54:02.517 AM	ADDITION_02:1...
DCS	1	6/14/2017 8:54:02.517 AM	DCS
Definition	1	6/14/2017 8:54:02.517 AM	Definition
Instruction	1	6/14/2017 8:54:02.517 AM	Instruction
Mode	1	6/14/2017 8:54:02.517 AM	Mode
Override DCS batch value	2	6/14/2017 8:54:02.517 AM	Override DCS b...
Category: Recipe Element			
BuildingBlockElementId	Get DCS Batch Values (RS) [1.0]	6/14/2017 8:54:02.517 AM	
Device	PSRDS RDP-Tcp#104	6/14/2017 8:54:02.517 AM	

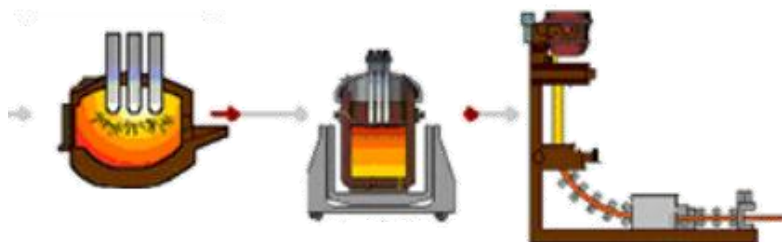
DEMO

FactoryTalk Analytics DataView

Analytics DataView Demo

• Example: Caster Operations

- Find operational insights by analyzing data from disparate data sources



Heat
Number
Created

LIMS Data
Captured

Caster
Operations
Data



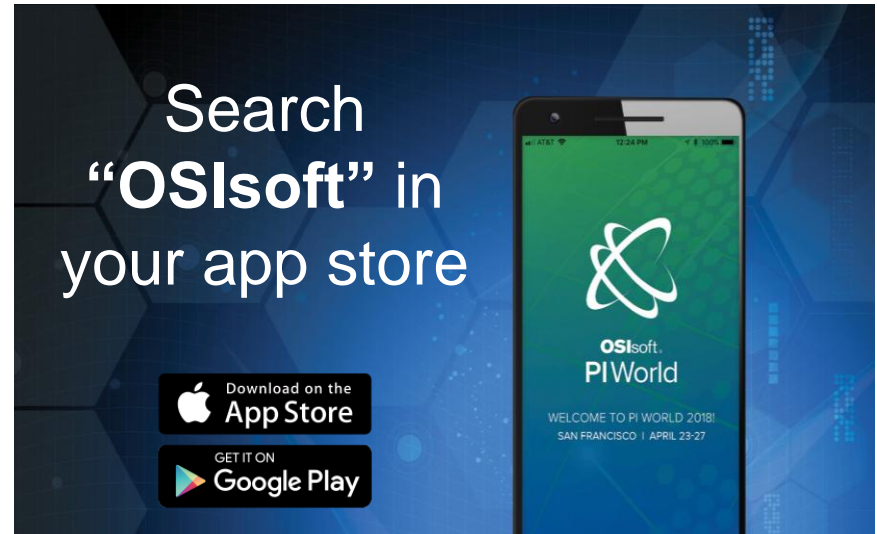
Questions?

Please wait for
the **microphone**

State your
name & company



Please rate this session in the mobile app!



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 TAPADH LEIBH 고맙습니다
 БАЯРЛАЛАА MISAOTRA ANAO
 DZIĘKUJĘ CI NGIYABONGA TEŞEKKÜR EDERIM GRACIES
 OBRIGADO شڪرا SALAMAT
 DANKON TANK TAPADH LEAT
 DANKIE TERIMA KASIH
 KÖSZÖNÖM
 СПАСИБО
 PAKMET CIZGE
 GO RAIBH MAITH AGAT
 БЛАГОДАРЯ GRACIAS
 МАНАДСАНИД
 ТИ БЛАГОДАРАМ
 TAK DANKE
 RAHMAT
 HATUR NUHUN
 CẢM ƠN BẠN
 WAZVIITA
 FALEMINDERIT
 DANK JE
 AČIŮ SALAMAT MAHALO IĀ 'OE TAKK SKALDU HA
 GRAZZI PAKKA PĒR
 PAXMAT CAĞA
 EΥΧΑΡΙΣΤΩ GRATIAS TIBI
 MAHALO IĀ 'OE TAKK SKALDU HA
 ありがとうございます
 SIPAS JI WERE TERIMA KASIH
 UA TSAUG RAU KOJ
 ТИ БЛАГОДАРАМ
 СИПОС
 MULTUMESC
 FAAFETAI
 ESKERRIK ASKO
 HVALA ХВАЛА ВАМ
 TEŞEKKÜR EDERIM
 GRAZIE
 DI OU MÈSI
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