



Mobile App powered by NFC and the OSIsoft PI System

Laurens Marijns

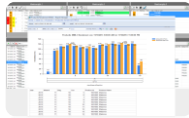


About Actemium

- Actemium is the VINCI Energies' brand dedicated to industrial processes
- Actemium is part of the VINCI group
- Actemium's mission is to help its clients to improve their competitive advantage and industrial performance
- Actemium deploys its expertise to advise, design, build & maintain systems across all industrial segments



ERP



MES/MOM



Automation



Motion/Robots



ICT



Electrical



Mechanical

About Actemium

- Strong expertise in the Food & Beverage industry
 - Top 3 of all industrial segments
 - Average yearly growth of 5%-10%



The Actemium network



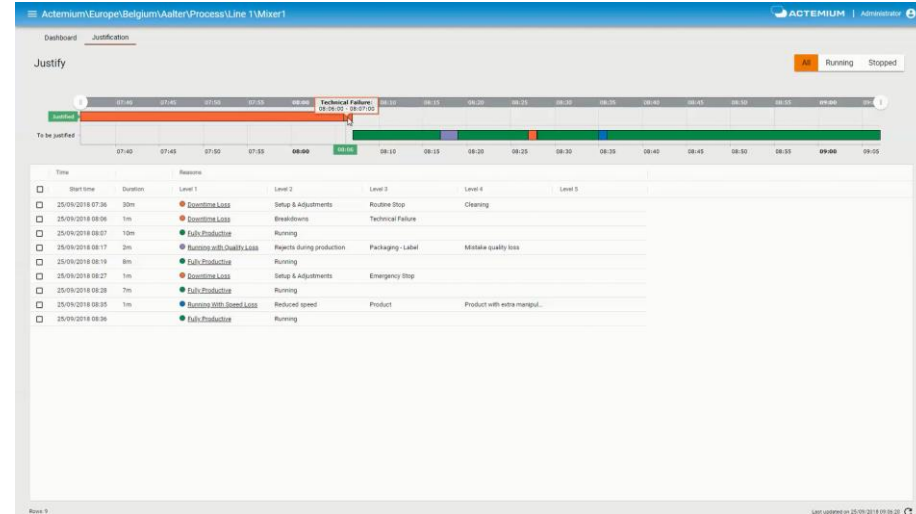
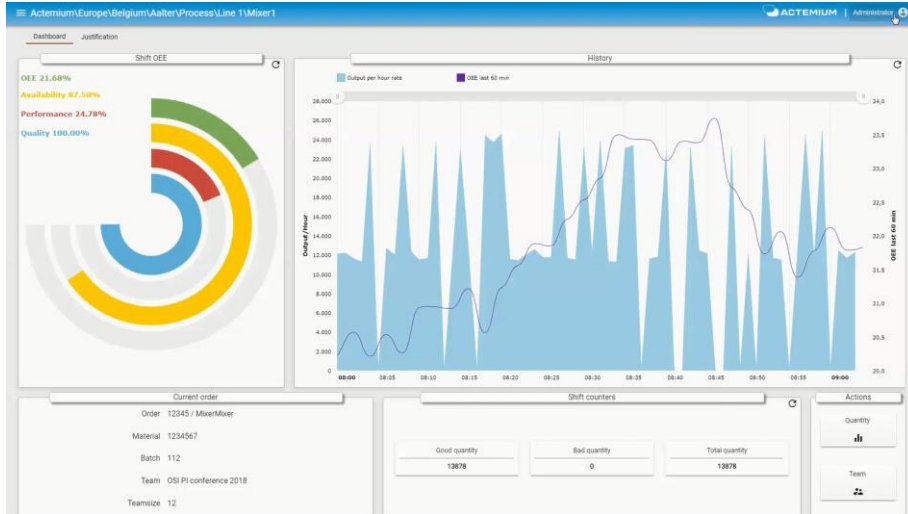
Our relationship with OSIsoft PI

Actual situation with ACTEMIUM

- Partnership in place
- System Integrator
- Discussions with the all Vinci Energies Group
- OSIsoft provides the software/Actemium provides the Services (installation/configuration)
- Existing common customer base

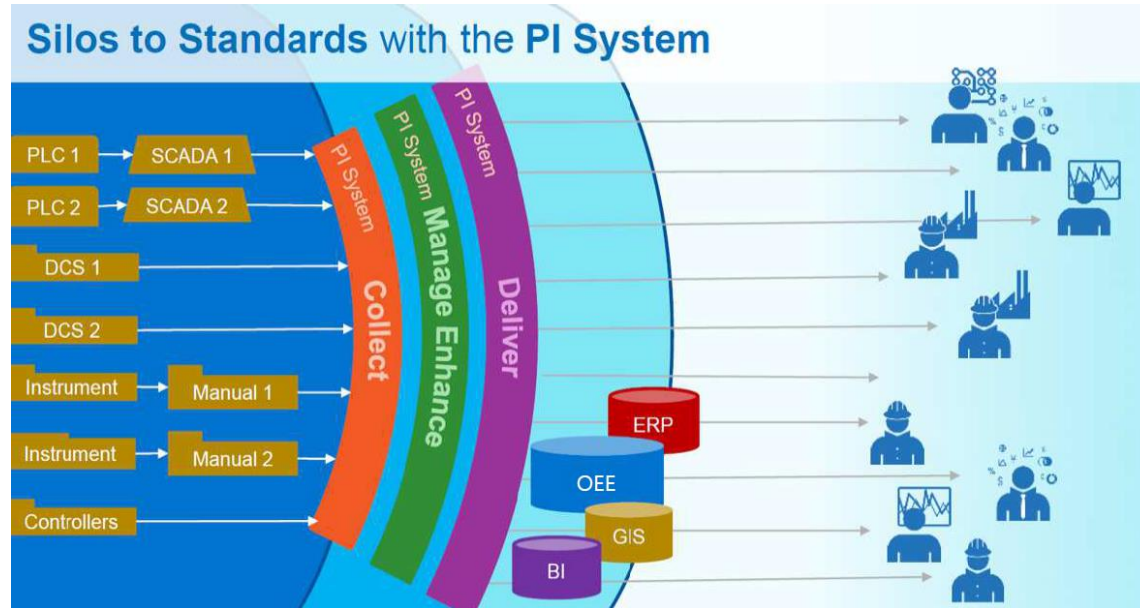
PI World Barcelona 2018

- State of the Art OEE Application on top of the OSIsoft PI System



Apps powered by the OSIsoft PI System

- Enhance the value of the OSIsoft PI System



The story of one of our customers

- Major Food & Beverage client
- Several sites around the world
- Standardized on the OSIsoft PI System
- Looking to get more value out of the OSIsoft PI System



Business challenge

- Improve manual data collection
 - Legacy Excel upload
 - Double data entry (Paper to Excel)
- Result
 - Reduced data value
 - Data tracked but not really used

Pilot use case

- Quality related data
 - Critical control points or CCPs
- Additional business challenges
- Business case

Critical control points (CCPs)

- Control can be applied
- Essential to prevent or eliminate a food safety hazard
- Critical limits
- Periodic monitoring requirements
- Audit trail



Additional CCP business challenges

- Right time?
- Right location?
- Right person?

Our approach

- Functional design
- Technical design
 - Capabilities of the OSIsoft PI System
 - Availability of commercial off-the-shelf (COTS) applications
 - Re-useability of other project solutions within the Actemium network
- Five main ingredients to successfully cope with the business challenges

Ingredient 1 – Mobile device

- Rugged
- Smartphone
 - Pocket-sized
- Mobile access



Ingredient 2 – NFC chips

- Available in different formats
 - Stickers
 - Mountable
- Near-field communication (NFC)
 - Short-range wireless technology
 - Read and write
- Tag the CCP locations in the field
- Readable with NFC reader integrated in modern smartphones



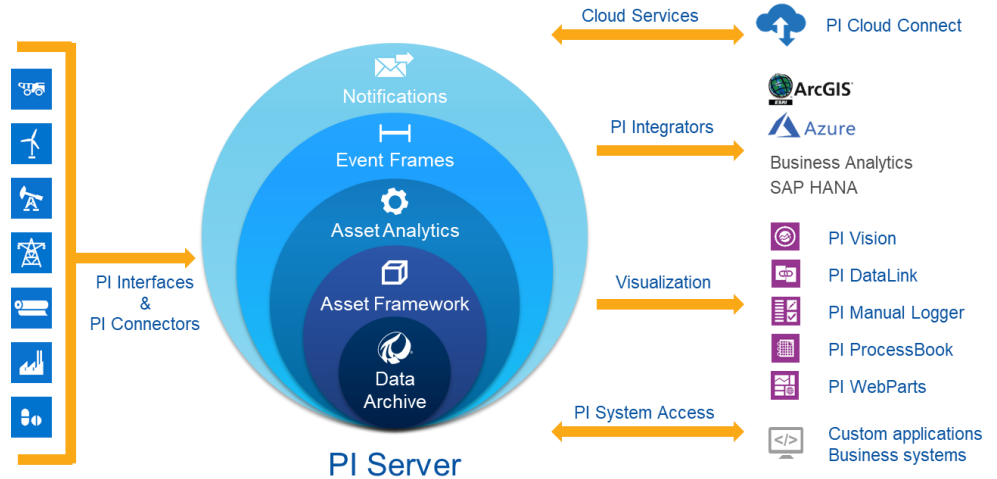
Ingredient 3 – Corporate user badges

- Corporate user badges
 - Existing
 - NFC
 - Readable with NFC reader integrated modern smartphones
 - Audit trail



Ingredient 4 – The OSIsoft PI System

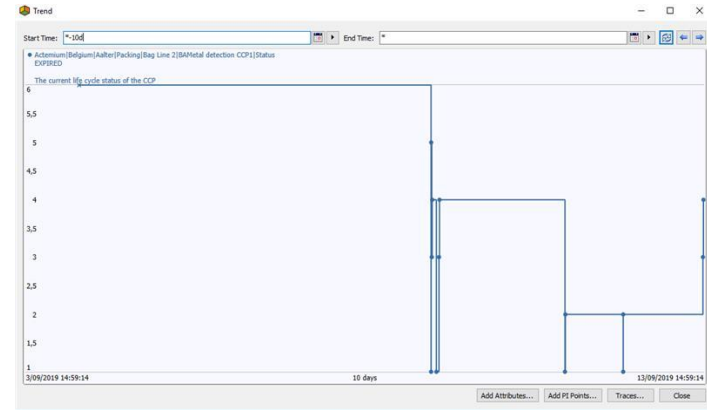
- PI Data Archive
- PI Asset Framework
- PI Asset Analytics
- PI Event Frames
- PI Vision



PI Data Archive (PI Points)

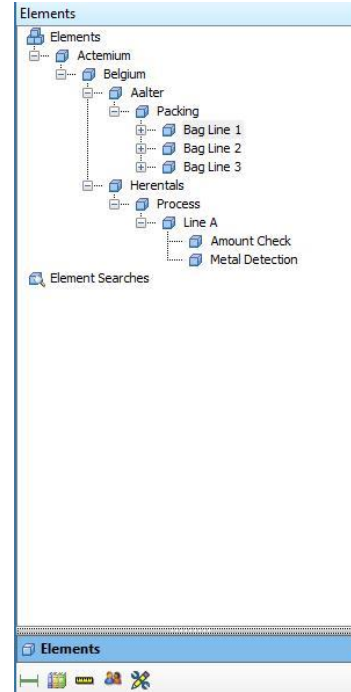


- CCP
 - Life cycle of a CCP (OK, NOK, EXPIRED, ...)
 - Value
- Context
 - Batch ID
 - Bag ID
 - User
 - URL Picture



PI Asset Framework

- Enterprise
- Site
- Area
- Line
- CCP
 - PI Points
 - Attributes
 - Registration frequency
 - Critical limits
 - NFC ID
 - User group
 - URL Video instruction
 - Asset Analytics
 - Event frames



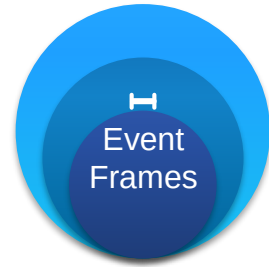
PI Asset Analytics

- Calculate PI Point
 - Life cycle a CCP (OK, NOK, EXPIRED, ...)
- Event frame generation



PI Event Frames

- Reporting
 - Life cycle of a CCP
 - Hold
 - Expired
 - ...



PI Vision

- Online dashboard
 - Short term
 - Real-time

CCP Dashboard

Packing - Bag Line 1	9/4/2019 9:58:06 AM
Waste counter	EXPIRED
Packing - Bag Line 1	9/4/2019 9:58:02 AM
Metal dection check	EXPIRED
Packing - Bag Line 1	Mister PI Conference 9/17/2019 8:10:52 AM
Visual inspection	NOK
Packing - Bag Line 2	Mister PI Conference 9/17/2019 8:07:14 AM
Metal detector	OK
Packing - Bag Line 3	9/4/2019 9:57:45 AM
Waste counter	EXPIRED
Packing - Bag Line 3	9/4/2019 9:57:37 AM
Visual saftey inspection	EXPIRED
Packing - Bag Line 3	9/4/2019 9:57:33 AM
Metal dection check	EXPIRED

Ingredient 5 – An App

- Binding Agent
 - The mobile device (NFC reader, camera, speakers, vibrating function, ...)
 - Device APIs
 - The OSIssoft PI System
 - PI System Acces

Front-end

- Multilanguage
- Scan user
- Overview of all the CCPs
- Worklist of the CCPs
- Scan CCP
- Details CCP
- Camera integration
- Security
- Audit trail

PI System Access



Back-end

- Services between the front-end and the PI System
- Services for Windows Authentication
- Services between the front-end and a fileserver
 - Pictures
- Services between Microsoft Power BI and the PI System
 - Long term
 - Historical

PI System Access



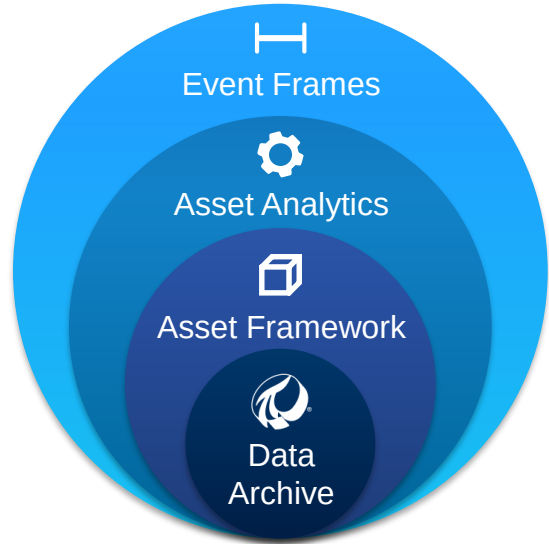
Services



How does the recipe look like?



The perfect dish



PI Server

Visualization



PI Vision



APP

NFC reader



Camera



FRONT
END

BACK
END

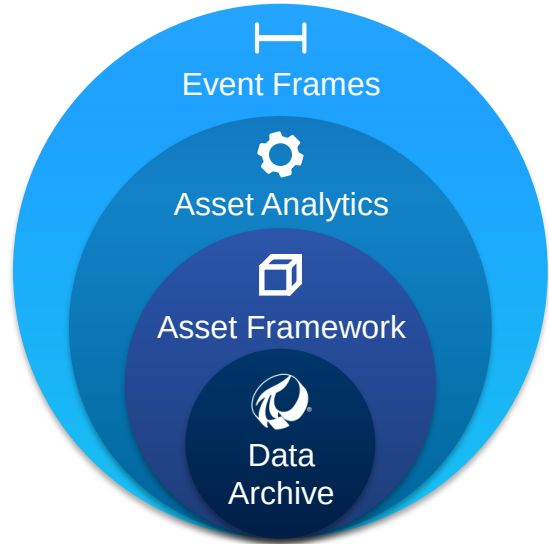
PI System Access



Third party



The recipe



PI Server

Visualization



PI Vision

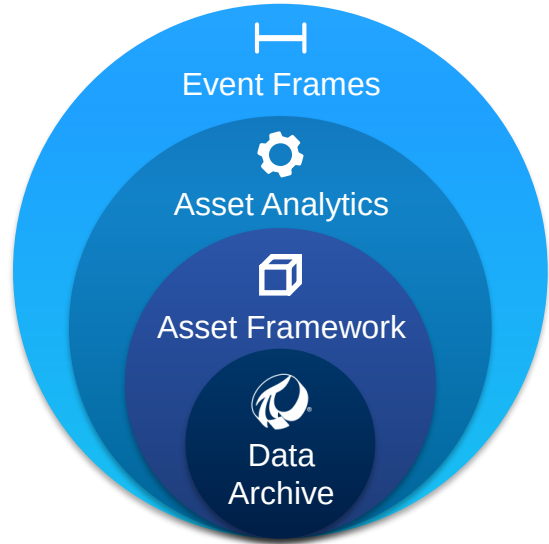


APP

FRONT
END

BACK
END

The recipe



PI Server

Visualization



PI Vision



APP

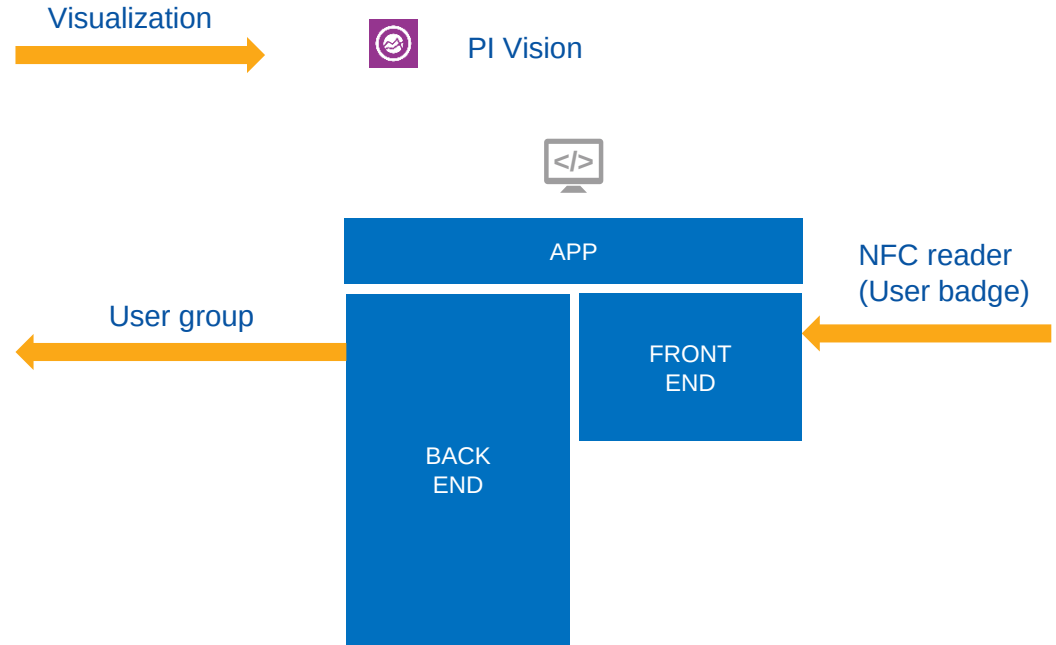
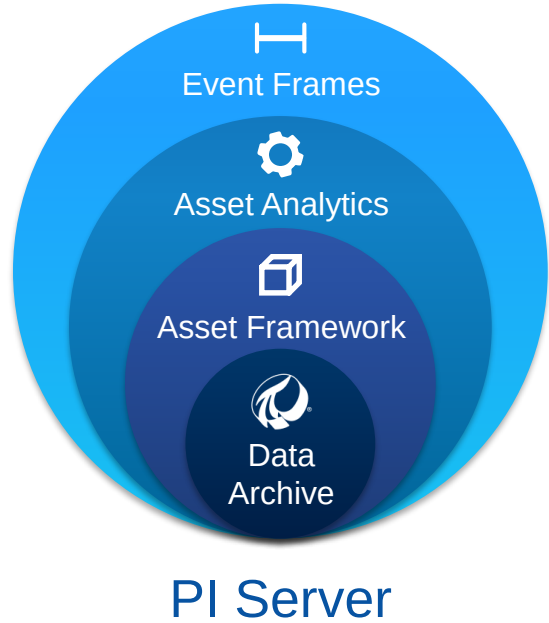
NFC reader
(User badge)



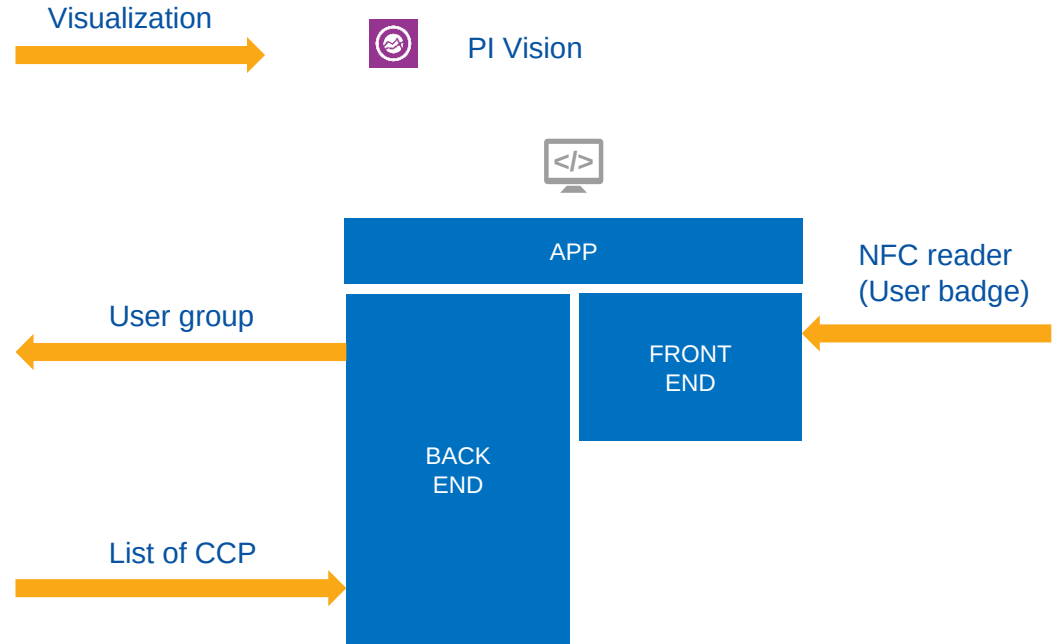
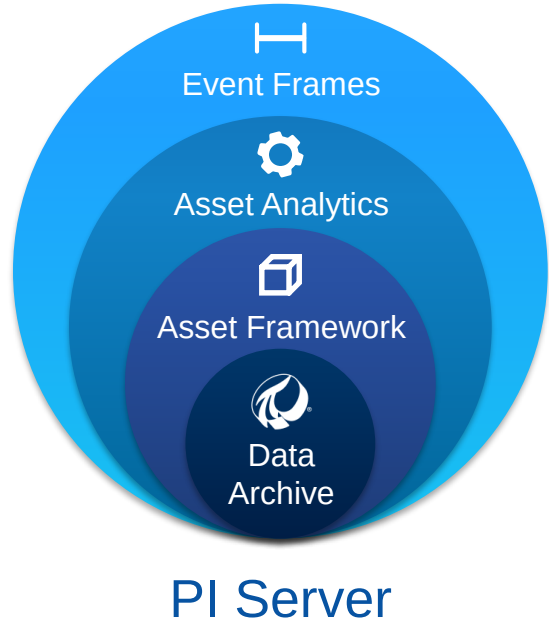
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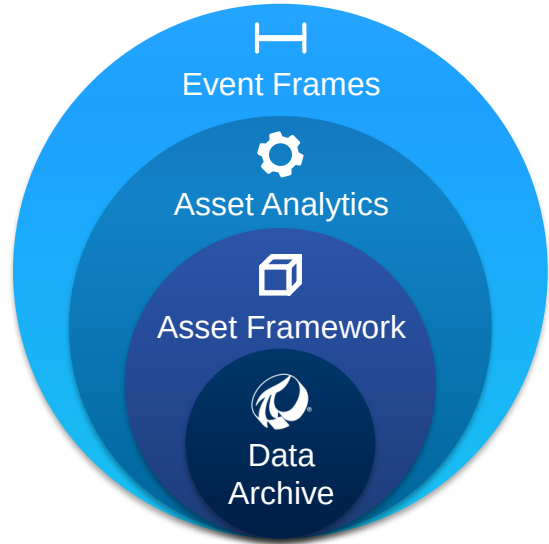
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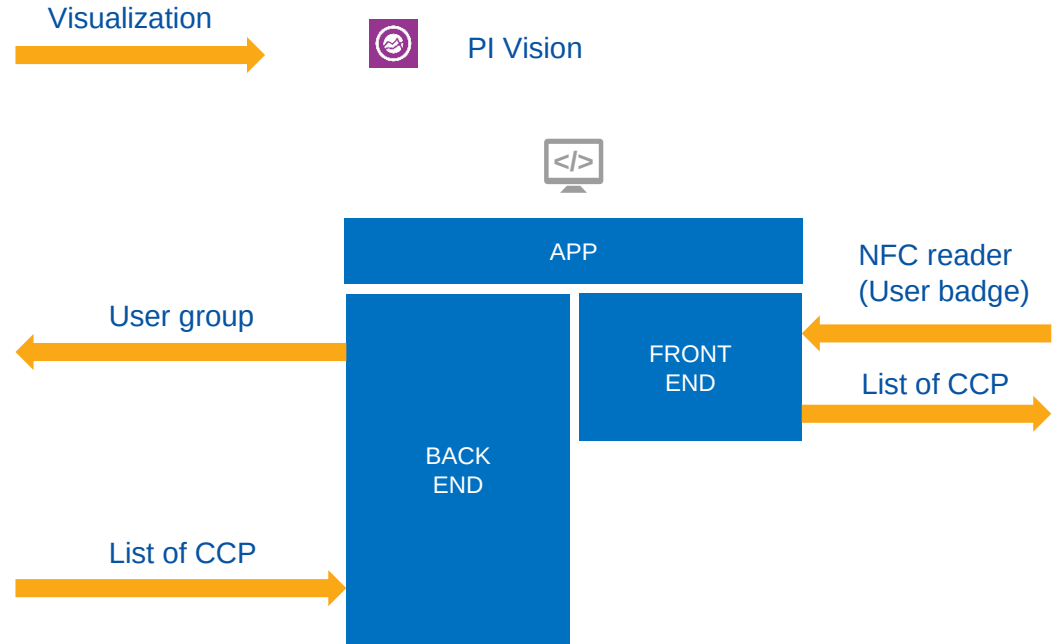
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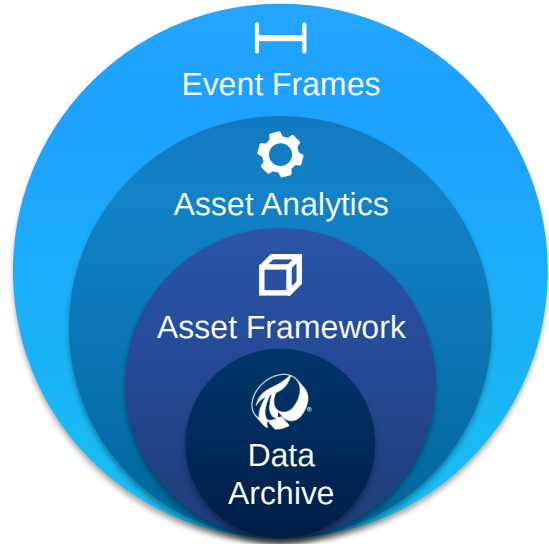
The recipe



PI Server



The recipe



PI Server

Visualization



PI Vision



APP

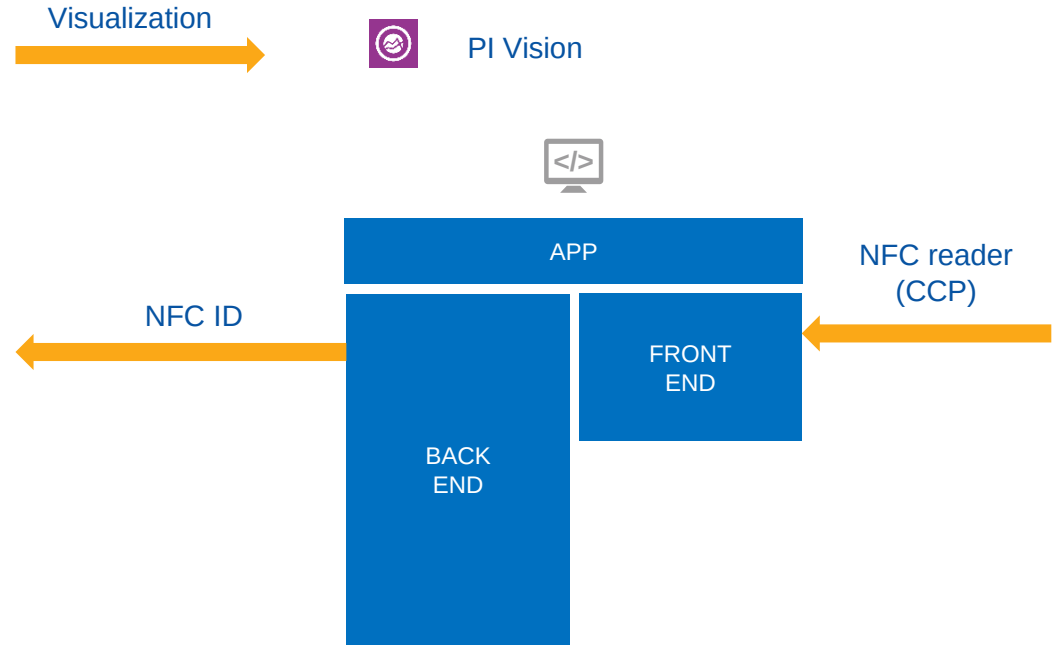
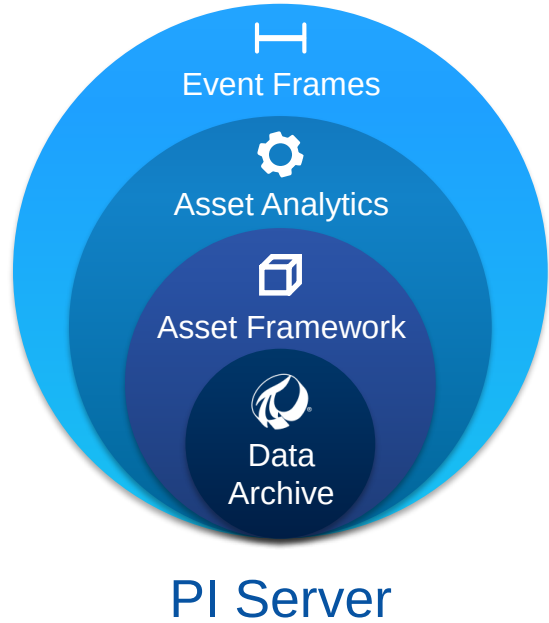
NFC reader
(CCP)



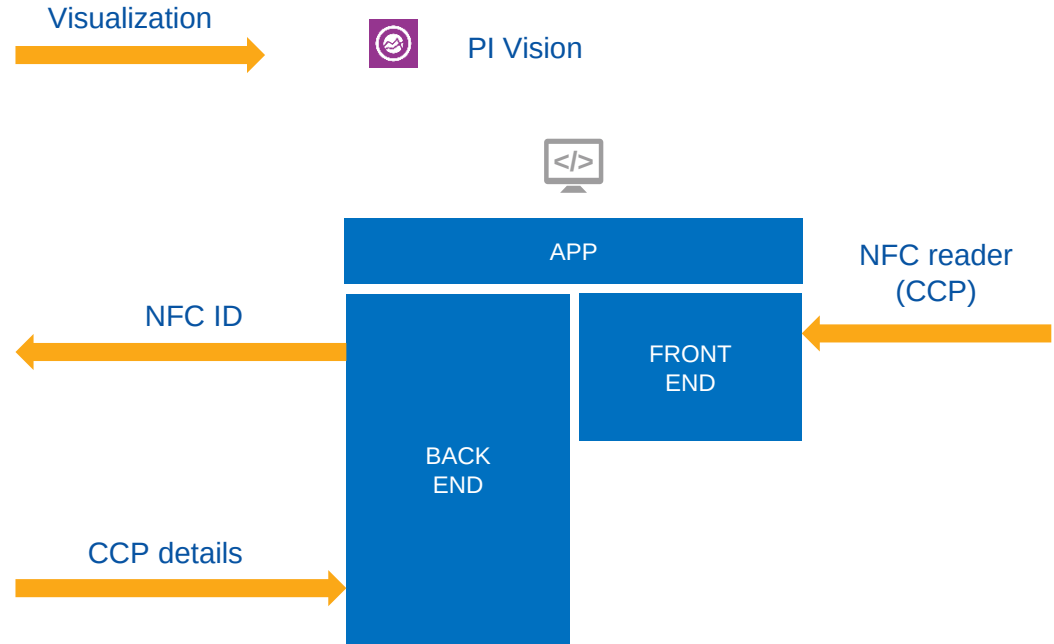
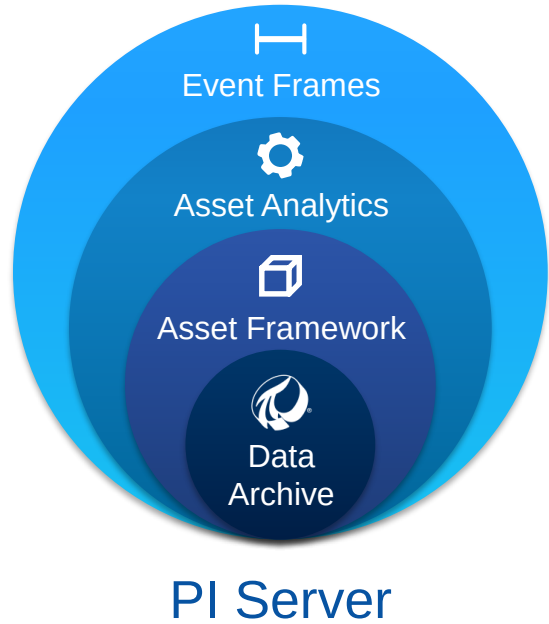
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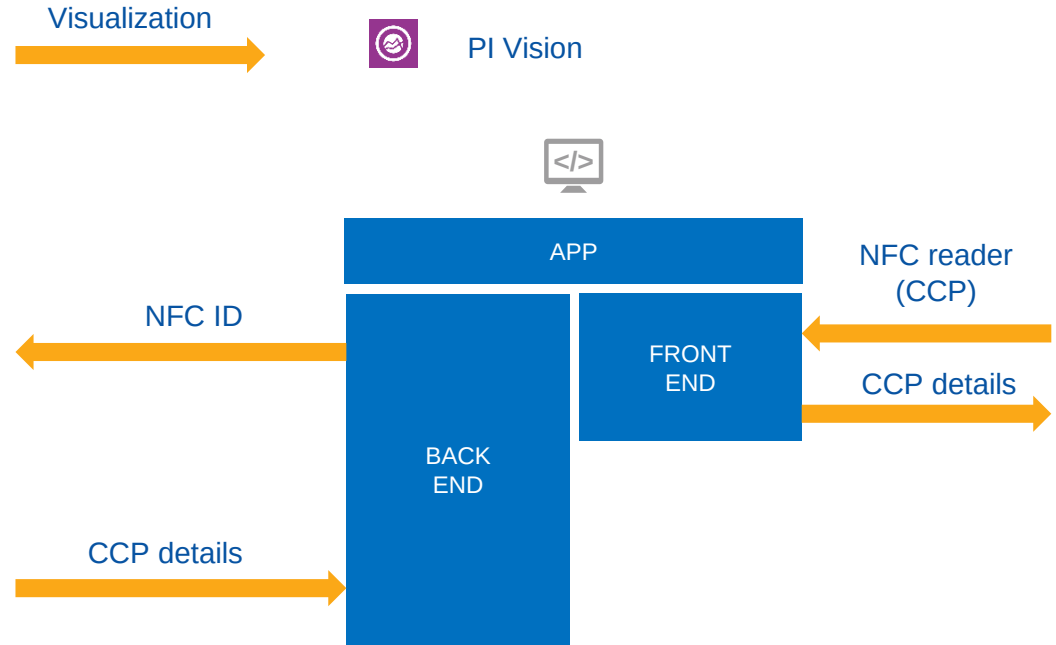
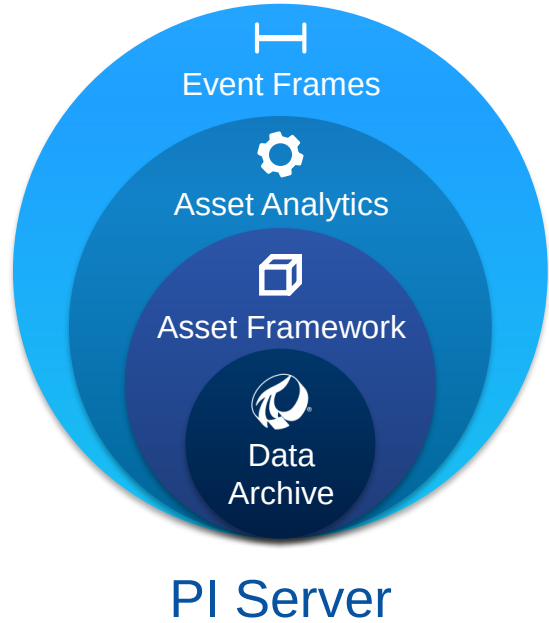
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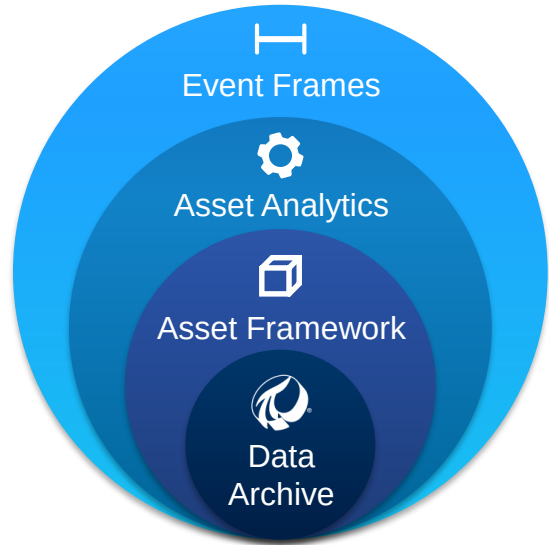
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The recipe



The recipe



PI Server

Visualization



PI Vision



APP

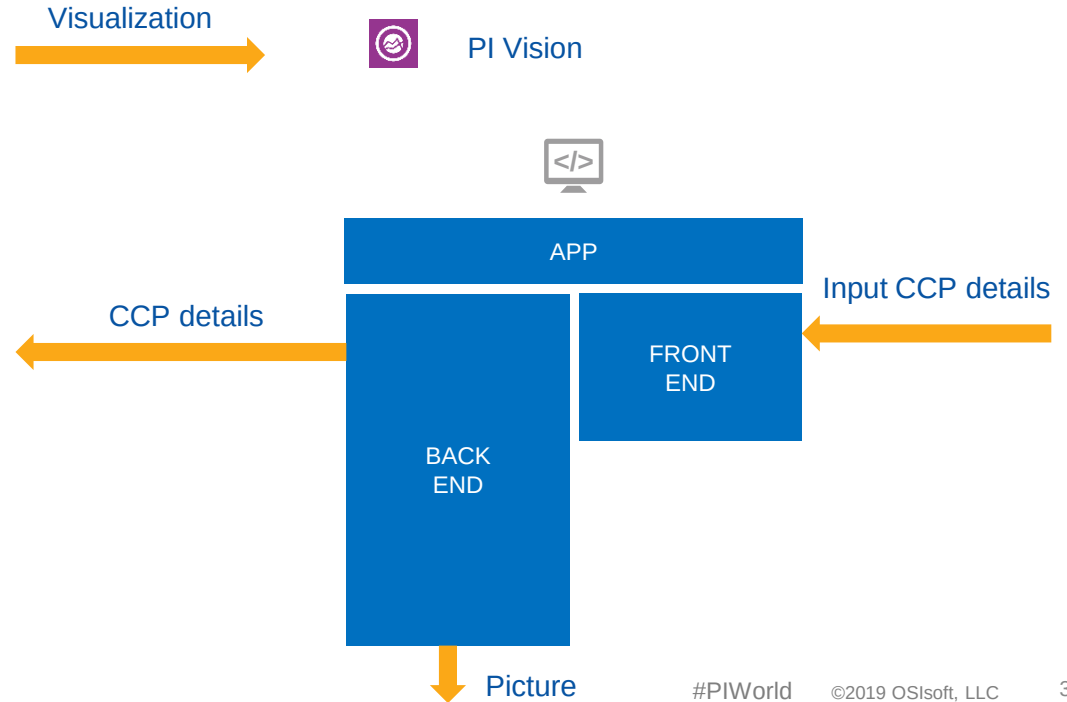
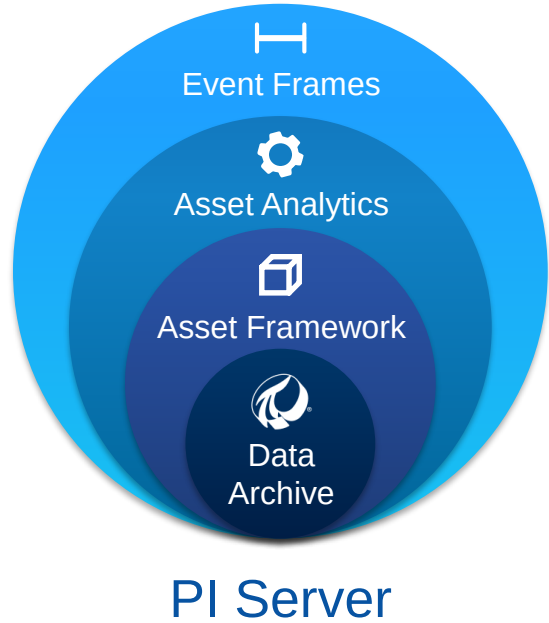
Input CCP details



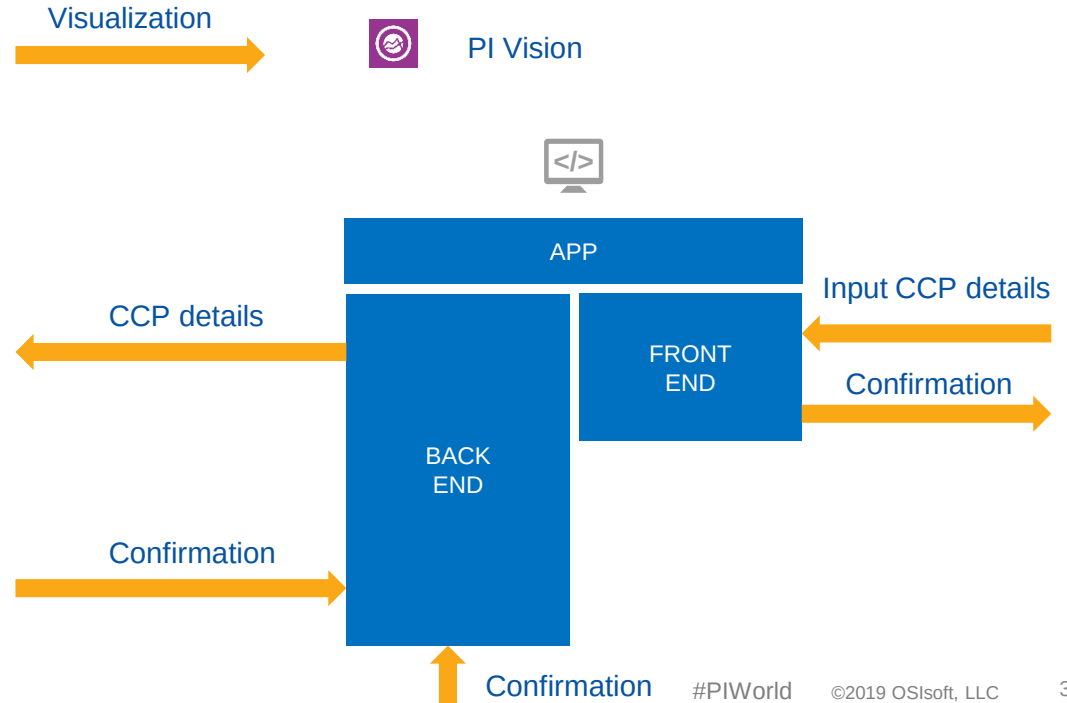
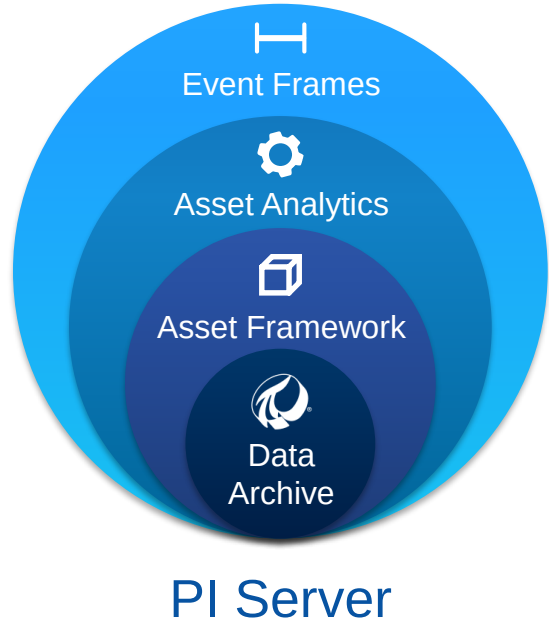
FRONT
END

BACK
END

The recipe



The recipe



DEMO

Mobile App powered by NFC and the OSIsoft PI System

Results

- Actemium addressed the business challenges successfully
 - Easy way of manual data collection
 - Eliminated double-data entry
 - Improved registrations of CCP
 - Right time
 - Right location
 - Right person
 - Increased data value

Business impact

- **Powered by** the OSIsoft PI System capabilities
 - No data duplication
 - All data accessible through the standard PI System tools (PI Vision, PI DataLink, ...)
 - Reduction of training requirements
 - Reduction of software complexity
 - Easy to add new CCPs
 - Multi-site ready
 - ...

Potential next steps

- Escalations through PI Notifications
- Non quality related data
- Integration with geolocation/GPS

Mobile App powered by NFC and the OSIsoft PI System

CHALLENGES

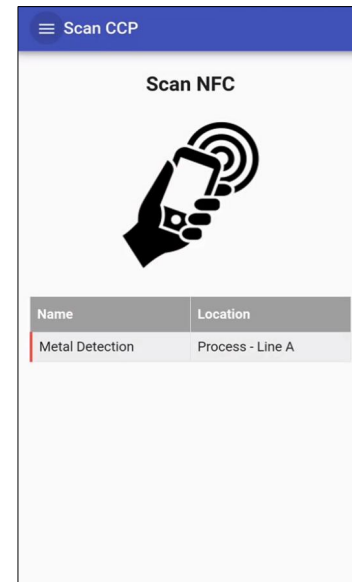
- Complex manual data collection
- Double data entry
- CCP registration challenges
 - Time
 - Location
 - Person

SOLUTION

- Mobile device
- NFC chips
- Corporate badges
- The OSIsoft PI System
- An App

BENEFITS

- Easy manual data collection
- Eliminated double data entry
- Improved CCP registrations
- Increased data value
- Powered by the OSIsoft PI System



More information?



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- Branch Manager MES/MOM
- Actemium
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More information?

- Actemium booth: 4
 - Belgium
 - Canada
 - France
 - Switzerland
 - The Netherlands



Questions?

Please wait for
the **microphone**

State your
name & company



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Complete the Survey!

Navigate to this session in
the mobile app for survey

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