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Where Digitalization comes to life

BASF Antwerp / Batenburg Magion

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No. 1
in chemistry

361
production sites

111,047
employees

78.6
billion euro
turnover

7,8
billion euro
Operational profit

2021

BASF AROUND THE WORLD

BASF PORTFOLIO

Chemicals

Petrochemicals

Intermediates

Materials

Performance Materials

Monomers

Industrial Solutions

Dispersions & Pigments

Performance Chemicals

Surface Technologies

Catalysts

Coatings

Nutrition & Care

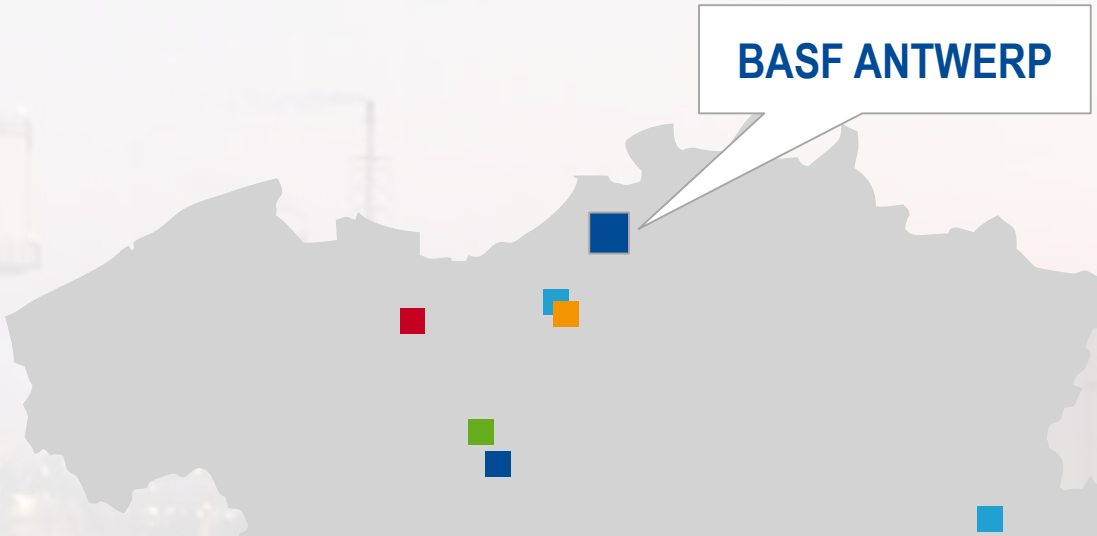
Care Chemicals

Nutrition & Health

Agricultural Solutions

Internal

A HEALTHY COMPANY



6
km²

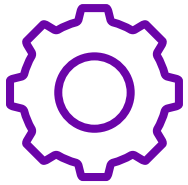
3,573
employees

7.3
billion euro turnover

948.4
million euro operating profit

2021

Innovations for a sustainable future



Challenge

- Digitalization is a corporate strategy of BASF, it’s a key differentiator to position us as leading chemical supplier for our customers, new technologies are introduced, requirements for our real-time data platform are increasing

Solution

- Implemented a state-of-the-art AVEVA PI System landscape, applied extensive change management to achieve successful onboarding of the users to the new platform

Benefits

- Enables us to implement new use cases like batch/lot registration with event frames, product stock calculations and reporting, daily reports on production and consumption, dashboards for utility usage
- Towards the future strategy we fit for purpose

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Business Challenge

Reliability

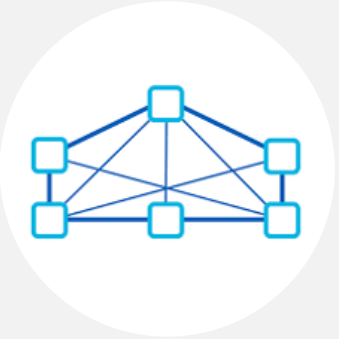
A fast, reliable, high available & scalable system

Data Quality

100% data integrity, reliable data

Context

Meaningful and understandable data



Connectivity

Easy data provisioning to data consumers

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Business Challenge

Reliability

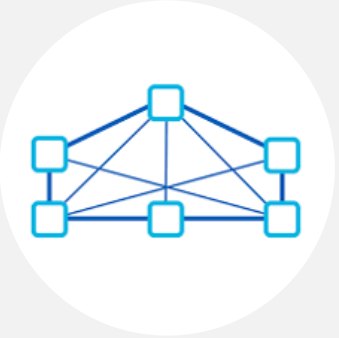
Redundancy on Server level

Data Quality

Redundancy on Interfacing level

Context

PI AF
Seeq



Connectivity

BI, WebAPI, OLEDB,…

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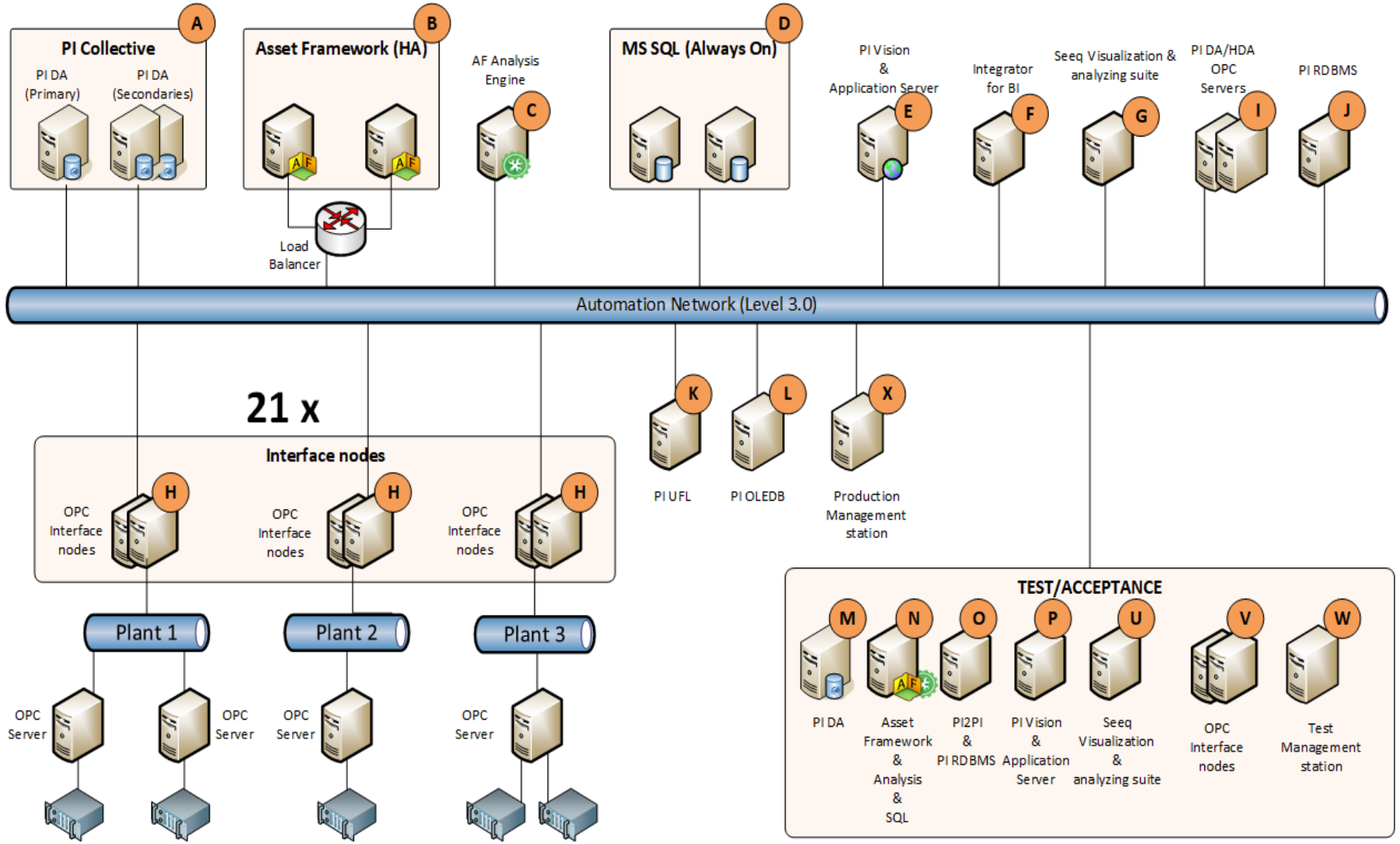
Technical overview



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Infrastructure on-premise

Setup

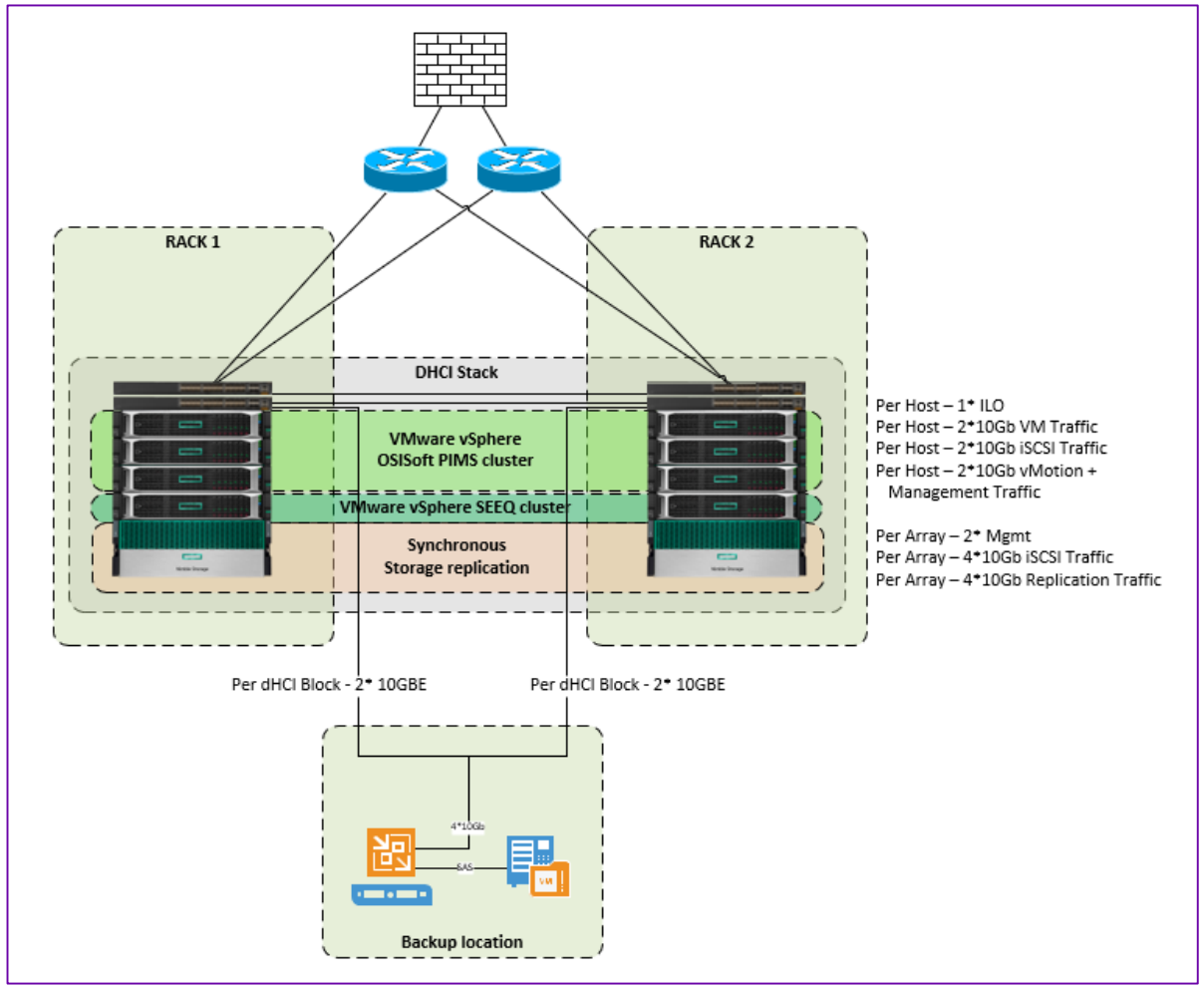
- Local infrastructure hosted by external partner
- High Available (DHCI), HP Nimble
- Integrated in the BASF domain and compliant with the BASF security guidelines
- Each Rack in different physical location

Points of attention

- Need good procedures between BASF and partner
  - Regarding Patching
  - How to react on problems
  - Who's responsible for which topics

Benefits

- Flexible adjustments of RAM, CPU, new server
- On premise infrastructure is more stable solution
- Risico mitigation in case of fire in datacenter => 2 physical locations for our redundant setup



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Batch/lot registration with event frames

Usecase

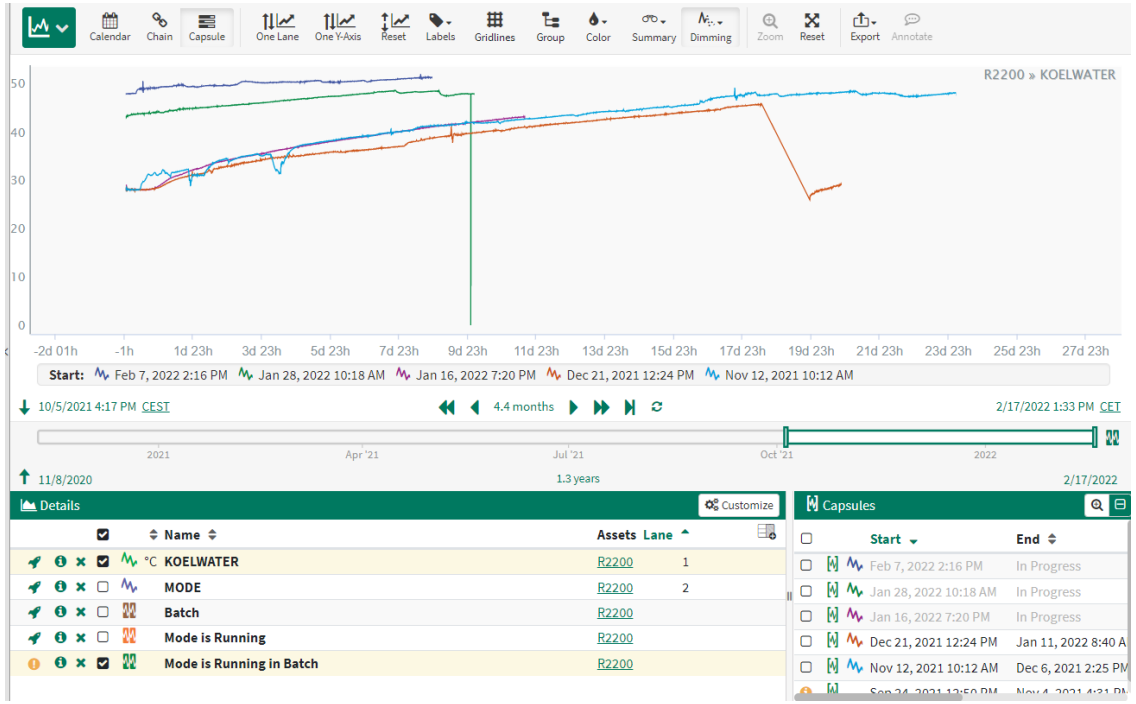
- ❖Batch data collected in different excels per reactor
- ❖Manual input and correction for defining a batch => Time consuming
- ❖No standard in the Excels => high maintenance

Solution

- ❖Generate an Event Frame in AF for each batch based on collected status tags
- ❖Calculating for each eventframe = batch the production total, the used raw materials and create a unique EventID
- ❖Display the events in Reporting Tool Seeq

Benefits

- ❖Accurate start and stop time of batch; Realtime follow up
- ❖No manual action required in Excel => worktime saved, no mistakes
- ❖More specific calculations can be visualized during the batch eventframe => increased understanding of the process



➢ Example:Temperature profile of cooling water during batch

➢ Other example: Pressure drop during batch

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Reporting of Accurate Product stock

Usecase

- A Product can be stored in multiple tanks; tank can be used for several products (not at once)
- Everytime another product is produced in a tank, the product Planning in Excel needs to be manually adjusted => delay and no accurate planning
- Production and logistics are not working with the same stock levels
- ERP has no accurate product stock data available => decrease sales

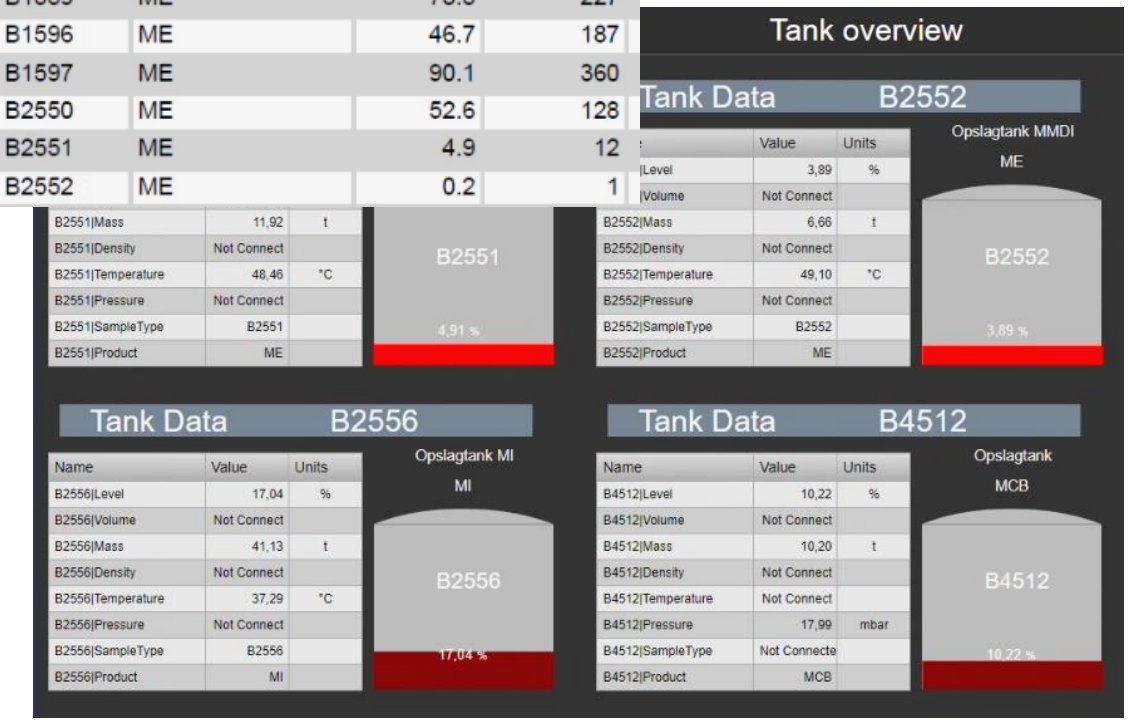
Solution

- Make ‘virtual’ product tanks in AF and calculate the stock levels per product regardless in which physical tank the product is stored
- Use this ‘virtual’ product level in the Product Planning Excel and visualized in PI Vision
- Automated Product stock feed to ERP

Benefits

- Everyone is looking at the same product stock levels
- Realtime and Accurate product planning can be done without knowing the physical location of the product
- Accurate stock planning in ERP => increased sales

Tank	Product	%	Ton
B1550	ME	7.9	10
B1551	ME	7.8	10
B1552	ME	50.1	65
B1553	ME	14.2	18
B1559	ME	73.5	227
B1596	ME	46.7	187
B1597	ME	90.1	360
B2550	ME	52.6	128
B2551	ME	4.9	12
B2552	ME	0.2	1



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Utility usage vs production

Usecase

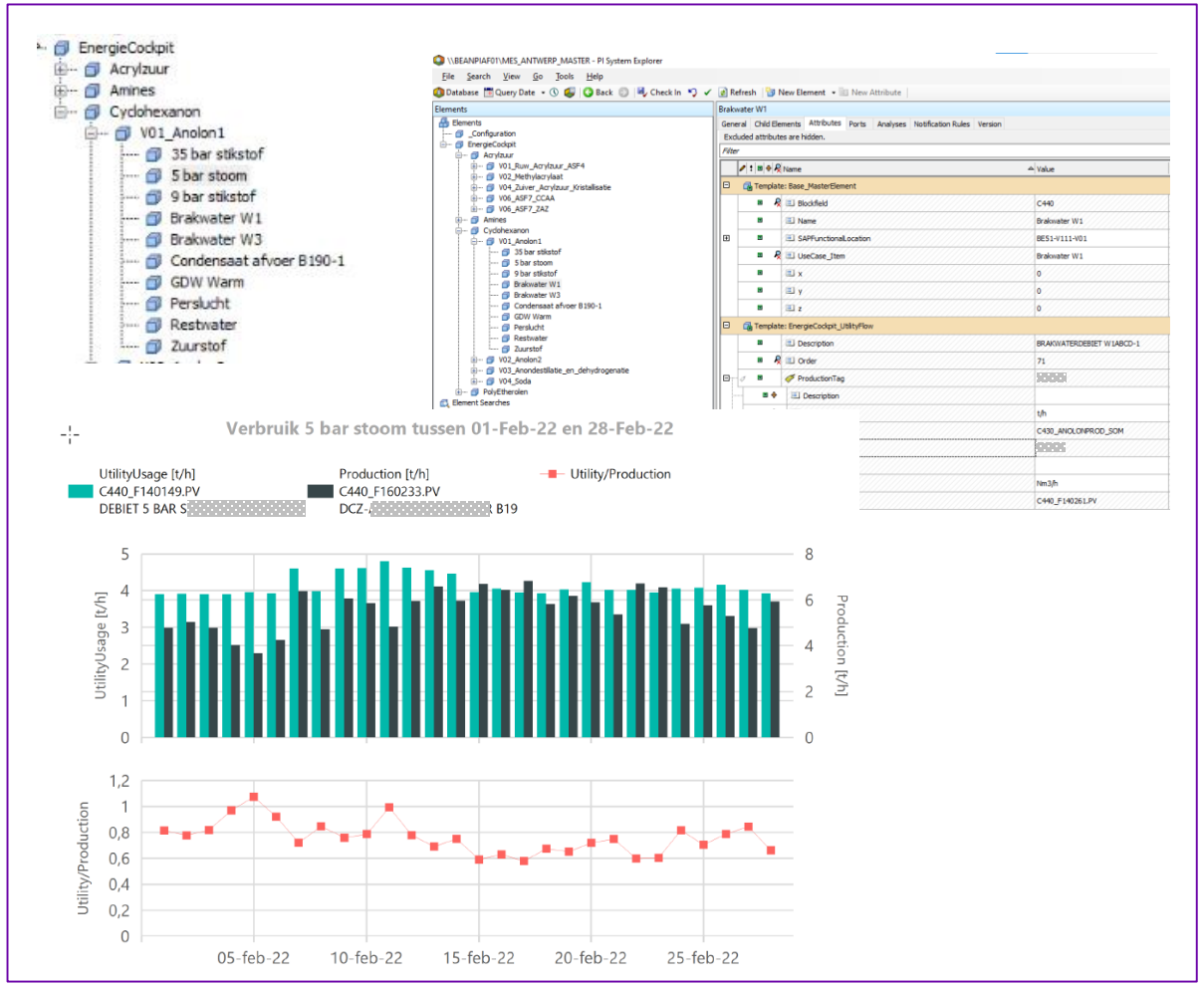
- ❖Create a Utilities cockpit per installation
- ❖Get more insight of the usage of utilities during production
- ❖Generate a report where the correlation between usage of utilities vs production is visible

Solution

- ❖Define in PI AF per Installation the utilities
- ❖Make the correct calculation for each utility per installation
- ❖Generate a report where the correlation between usage of utilities vs production is visible

Benefits

- ❖More awareness of utility usage during production, report is discussed on a monthly base
- ❖Possibility to detect inefficient usage of utilities and can lead to process optimalisation => Saving costs



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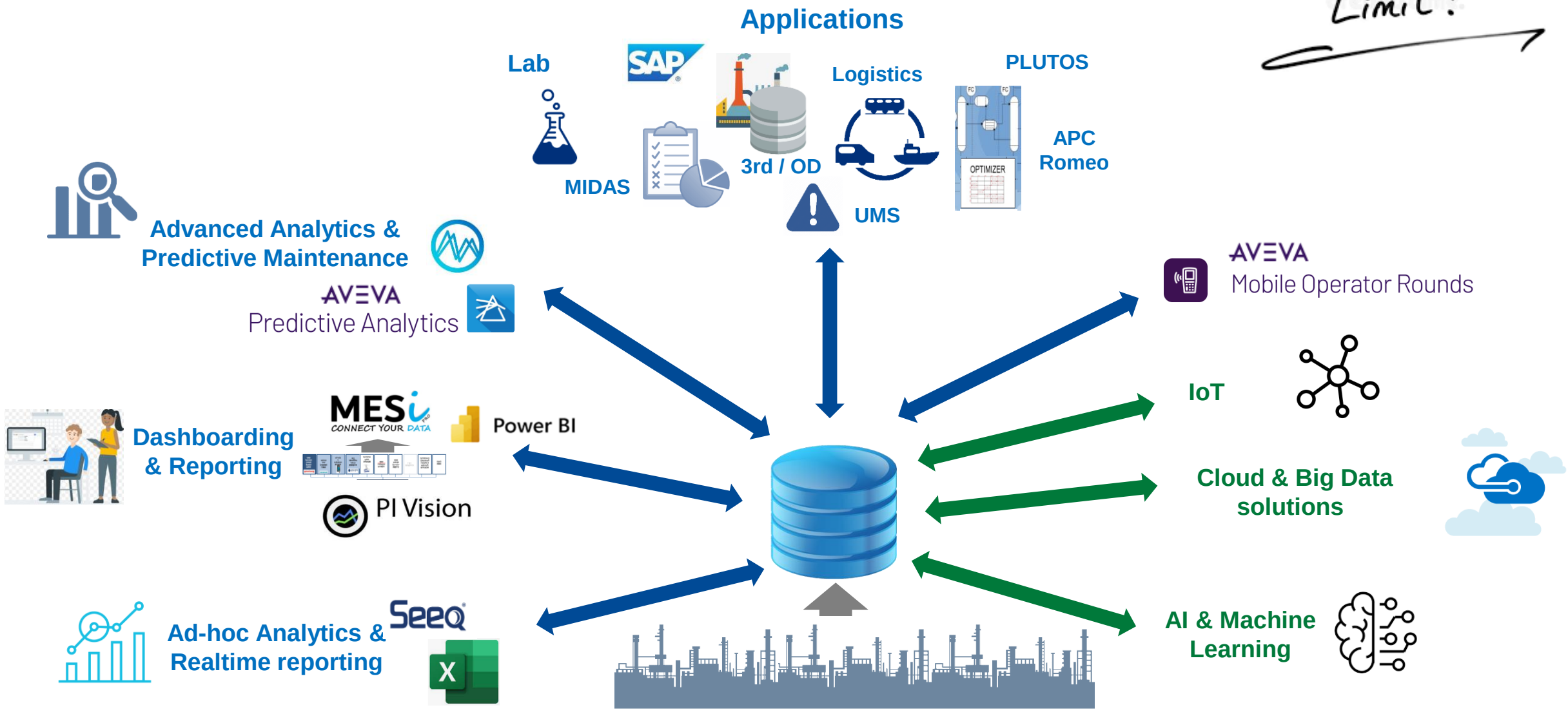
Sustainable for future digitalization

The Sky is the Limit!



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