DIGITALISATION OF DAIRIES

Au2mate
PROCESS AUTOMATION PARTNER

WELCOME TO…..

HIGH PERFORMING QUALITY SYSTEMS AT RIGHT TIME & RIGHT PRICE

YOUR PARTNER IN PROCESS AUTOMATION & INDUSTRIAL IT

AT YOUR SERVICE!

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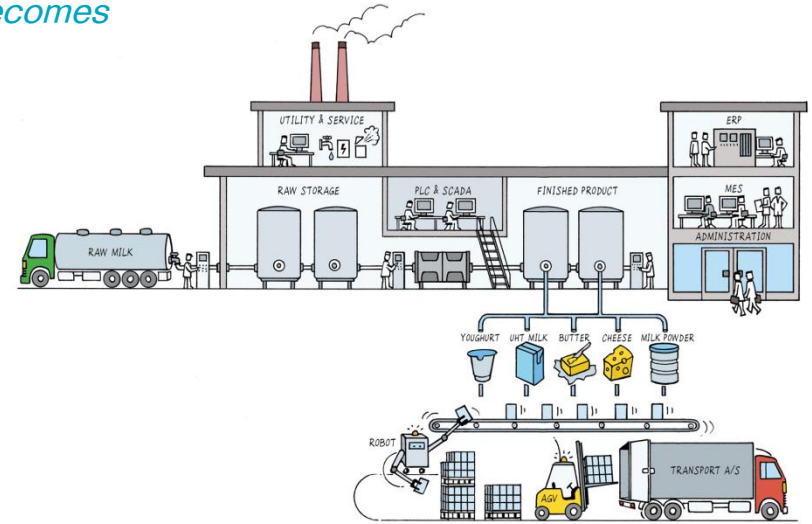
BACKGROUND

How do we use the toolbox of Industry 4.0 to support the efficiency of workflow, operation and maintenance in dairies that continously becomes larger and more complex



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OEE – OVERALL EQUIPMENT EFFECTIVENESS

OEE An important tool in the toolbox

Monitor and improve the effectiveness of production in your plant by collecting real time data and acting on the collected data

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OEE – OVERALL EQUIPMENT EFFECTIVENESS

Au2mate OEE Tool

- A General OEE tool developed together with TINE in Norway, giving the tool many advantages obtained through the development process with TINE
- The Tool is designed to be highly flexible, the solution can be used to compare data across a complete enterprise while at the same time being used to show data from specific production lines and equipment.
- The tool uses HTML5 and is based on recognized standards S88 and S95
- The tool is used at TINE Dairy in Jæren and at Glycom in Esbjerg here in Denmark.

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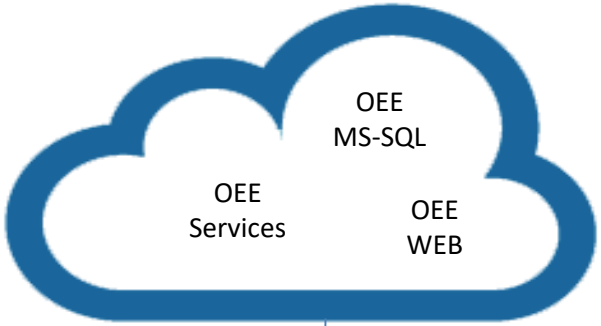
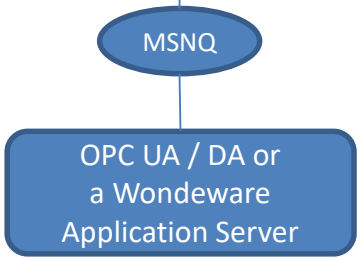
OEE – OVERALL EQUIPMENT EFFECTIVENESS

Architecture

Run OEE locally in the adminstration layer or place the services in a cloud based server solution



Collect OEE data locally in the production layer and push the data to the administration layer



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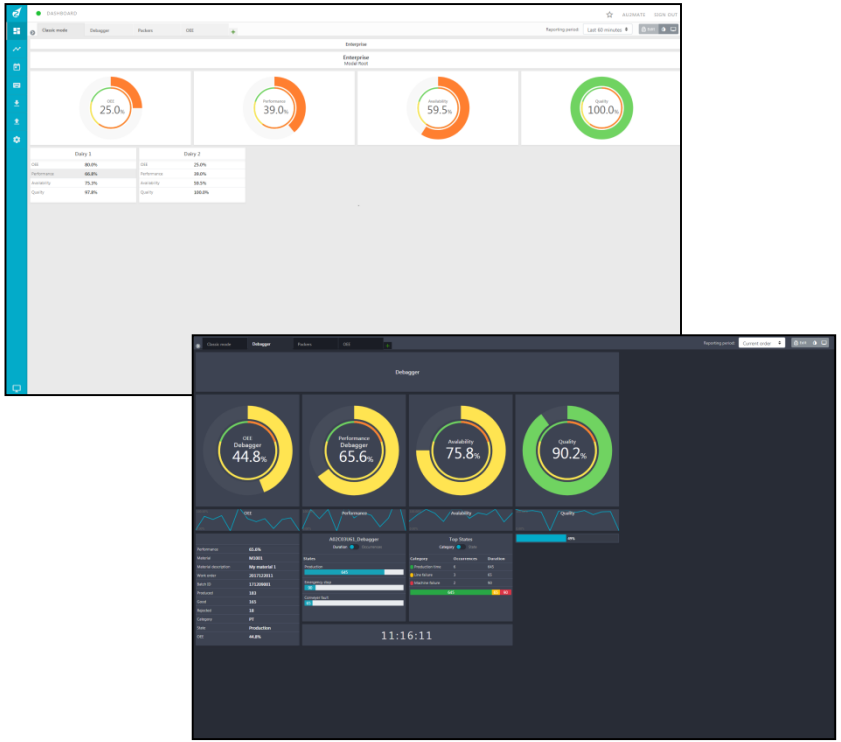
OEE – OVERALL EQUIPMENT EFFECTIVENESS

DASHBOARD Out of the Box

- *User configurable dashboards*
- *Night vision*
- *Full screen*
- *Multi language*
- *User access control*
- *Aid for color blindness*
- *Prepared for mobile devices*
- *Collapsible menu*
- *User defined OEE Reports*
- *Import and export of OEE data*
- *Using standard web browsers*



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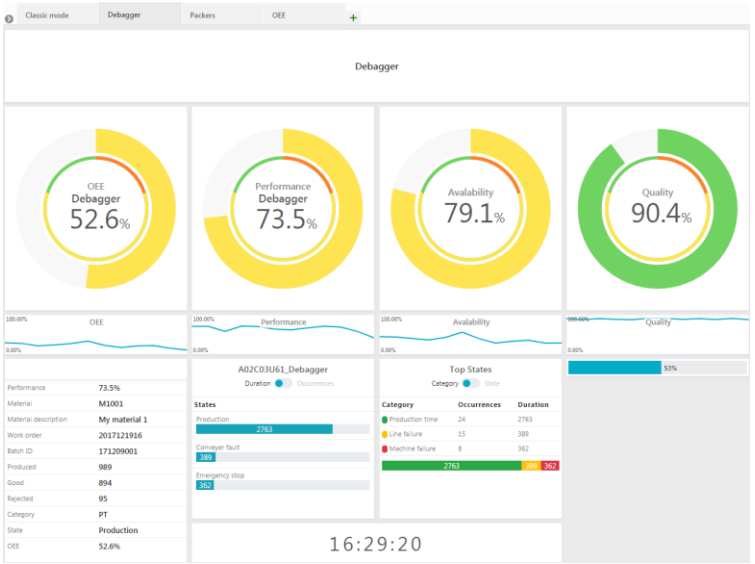
OEE – OVERALL EQUIPMENT EFFECTIVENESS

USER DEFINED DASHBOARDS

Create dashboards using highly configurable Components. Select equipment and specific data for each individual item on the dashboard.

- *Gauges,*
- *Trendcurves,*
- *Data tables,*
- *Text boxes,*
- *Top states,*
- *Top states charts*
- *Progress bars,*
- *Semi automatic state determination*
- *Manual state control*
- *Production schedule*
- *Embedded web pages*
- *Clock…*



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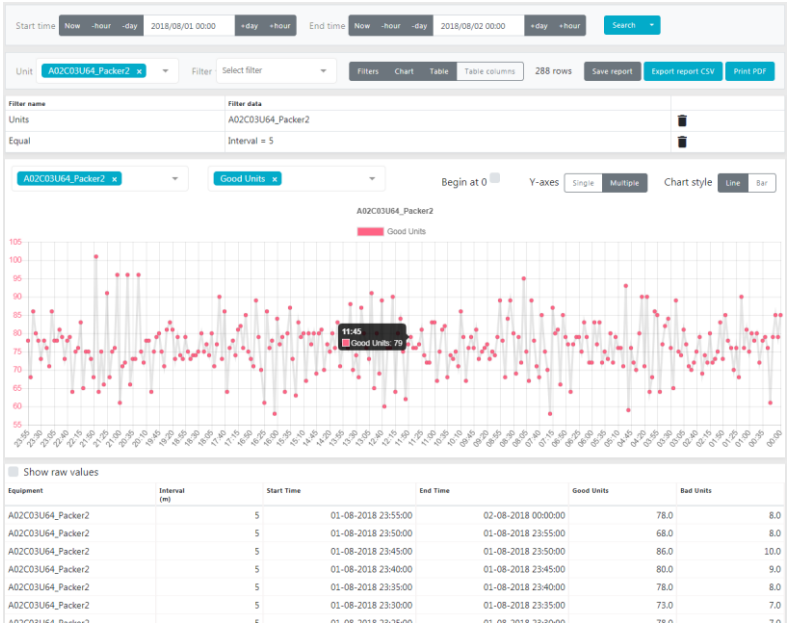
OEE – OVERALL EQUIPMENT EFFECTIVENESS

USER DEFINED OEE REPORTS

- *Create reports and save them for later use using the buildin report tool*
- *Limit the report data by filters and time periods and select what data to display*
- *Convert the reports into PDF files and share them with your coworkers*
- *Export the report data and continue analyzing the data using e.g. Excel…*



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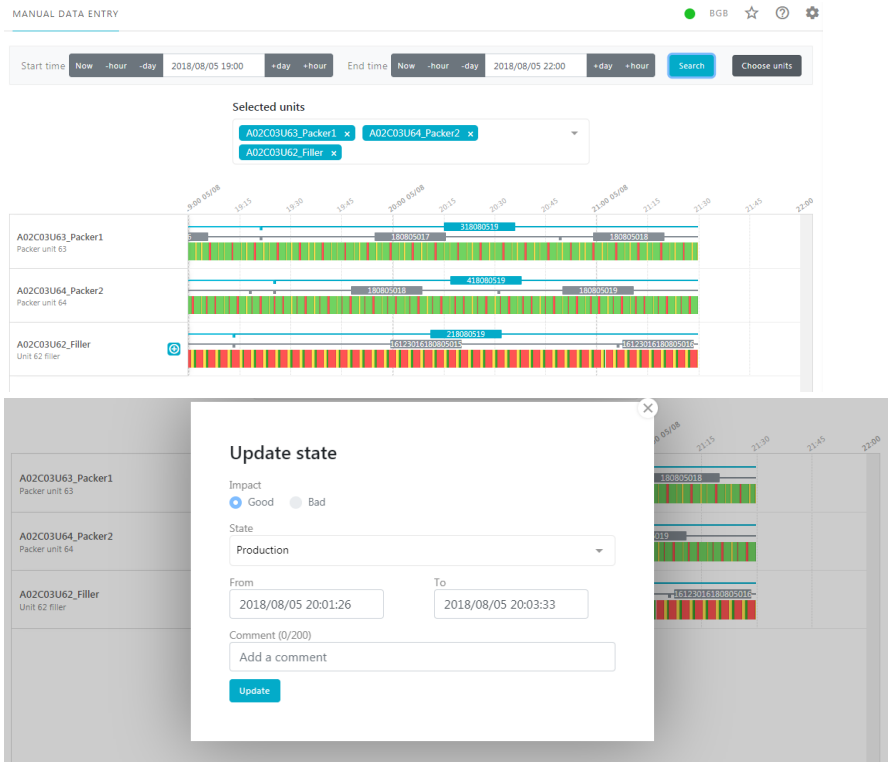
OEE – OVERALL EQUIPMENT EFFECTIVENESS

MANUAL DATA ENTRY

- *Overview of OEE states recorded in a given time period*
- *Update OEE states or insert new states*
- *Change produced amounts*
- *Changes will initiate recalculations of the stored OEE KPIs*



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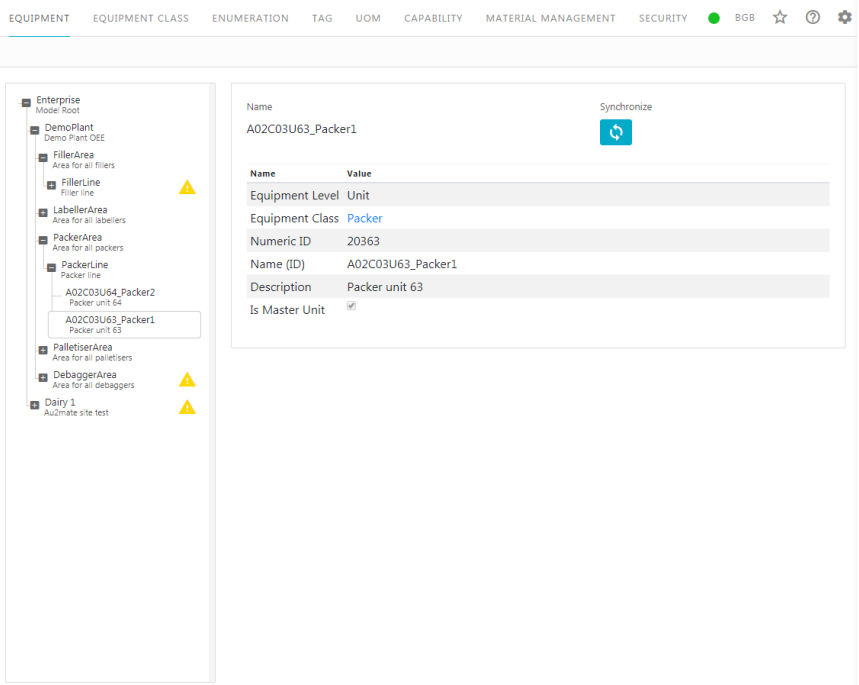
OEE – OVERALL EQUIPMENT EFFECTIVENESS

OEE Plant modelling

- Create a plant model using a standard S88 model and start collecting OEE data
- Equipment in the model is created using equipment classes



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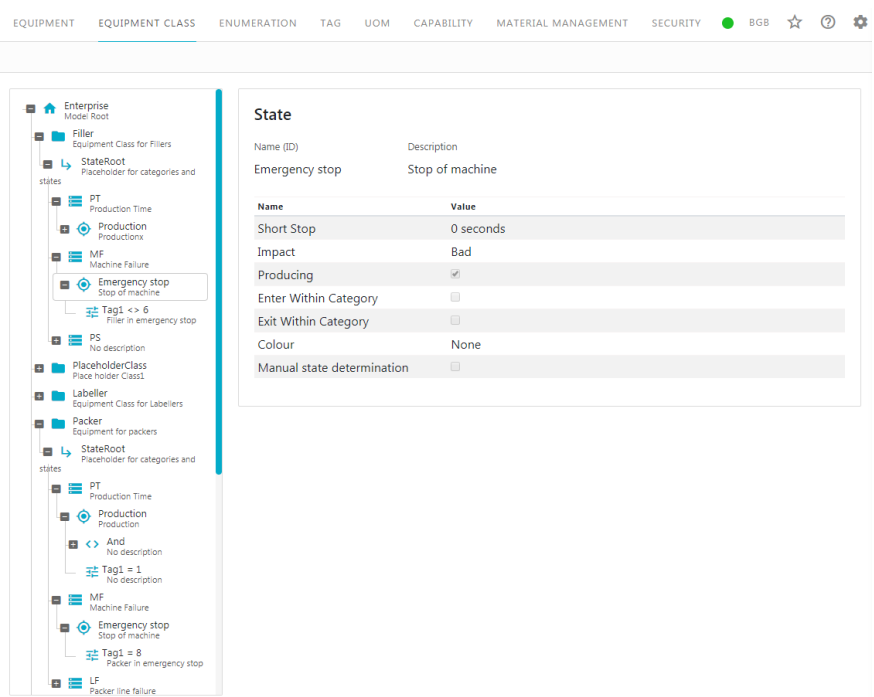
OEE – OVERALL EQUIPMENT EFFECTIVENESS

OEE Equipment classes

- *Predefininition of an equipment type*
- *Define, organize and prioritize equipment states*
- *Build states using logical expressions based on data read directly in a PLC*
- *Read data using either an OPC server or a Wondeware platform*



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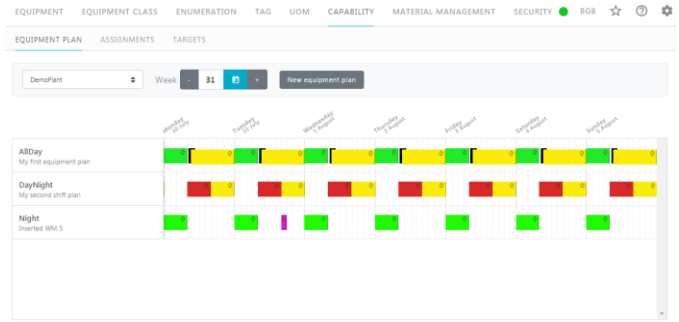
OEE – OVERALL EQUIPMENT EFFECTIVENESS

OEE Capabilities

- *Create and edit shift plans with great ease*
- *Define temporary deviations from daily shift plans*
- *Easy assignment of equipment to shift plans*
- *Setup generic equipment run rates and optionally link them to specific materials*



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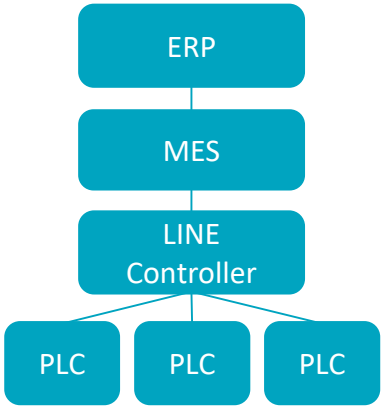
LINE CONTROLLER

Using line controllers leads to

- Reusable code and standardized interface to various PLC providers
- Shorter time from theory to implemented solution
- Customization only needs to be done one time
- Standardized tracebility and no data loss
- Easy access to visualization of production data
- Easy handling of various products and batch sizes
- Easy integration to ERP (eg real-time material consumption and production events)



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INTERFACE PILOT PROJECT

Siemens MindSphere In Au2mate Academy

MindSphere is the cloud-based, open IoT operating system from Siemens that connects your products, plants, systems, and machines, enabling you to harness the wealth of data generated by the Internet of Things (IoT) with advanced analytics.

Pasteuriser Unit

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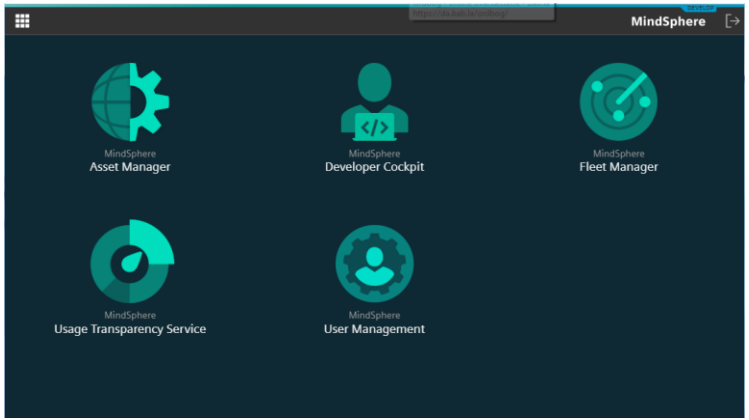
INTERFACE PILOT PROJECT

Whats in the package

- Analyzing tools that help you understand the data – Tools can be purchased in the App store
- Develop new tools and sell them through the App store
- A gateway that buffers data if you loose the live connection
- Data safety through encryption of data in the gateway before sending it into the cloud
- User management etc.



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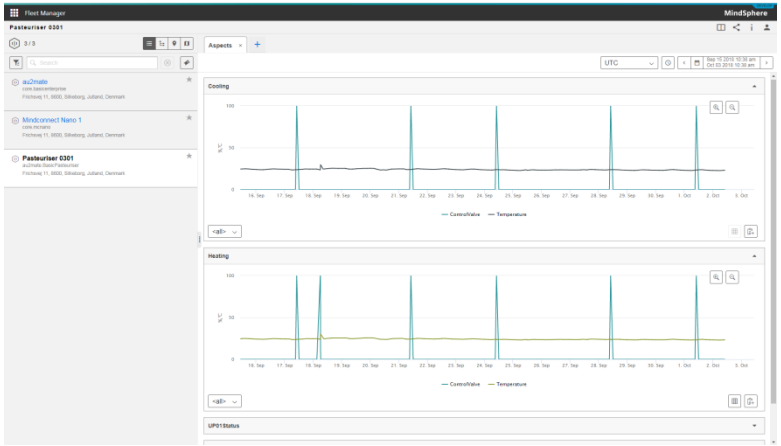
INTERFACE PILOT PROJECT

The Output

- Visualization and analysis of data across an enterprise
- Data located in a cloud solution making it available from outside the production network



INDUSTRY 4.0

THANKS FOR YOUR ATTENTION ☺!

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