

WELCOME TO

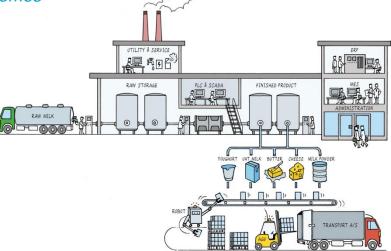


HIGH PERFORMING QUALITY SYSTEMS AT RIGHT TIME & RIGHT PRICE YOUR PARTNER IN PROCESS AUTOMATION & INDUSTRIAL IT

AT YOUR SERVICE!



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





DIGITALISATION OF DAIRIES 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





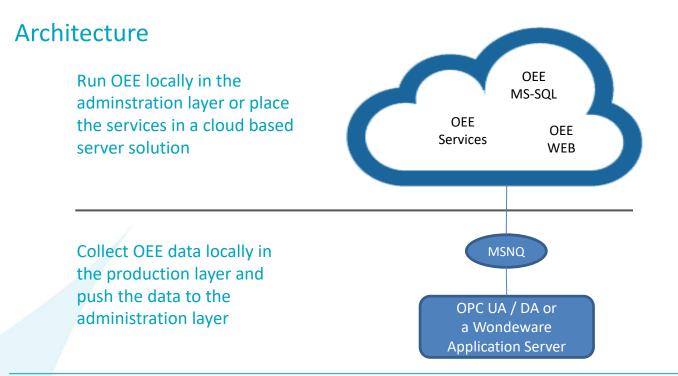
OEE – OVERALL EQUIPMENT EFFECTIVENESS

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.



DIGITALISATION OF DAIRIES OEE – OVERALL EQUIPMENT EFFECTIVENESS



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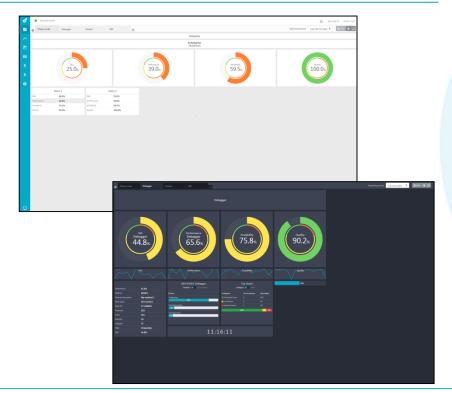
www.au2mate.dk



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



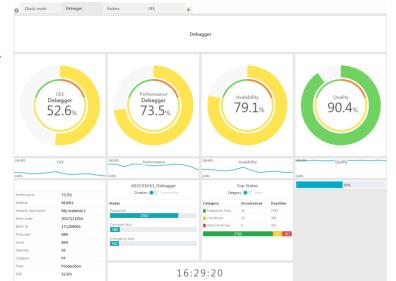


OEE – OVERALL EQUIPMENT EFFECTIVENESS

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...





DIGITALISATION OF DAIRIES 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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A02C03U64_Packer2 5 01-08-2018 23:30:00 01-08-2018 23:35:00 73.0	



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

		Selected units							
		A02C03U63_Pack		J64_Packer2 ×		-			
		A02C03U62_Filler							
	9:00 0510	8 19 ¹⁵ 19 ³⁰	19.45 20.00	20.15 20	30 20.45	21:00 05/08 21:1	5 21.30	22:45	22.00
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		From 2018/08/05 20:			5 20:03:33		15123015180	805016-	

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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

Root	Name		Synchronize		
noPlant o Plant OEE	A02C03U63_Packe	erl	\$		
lerArea sa for all fillers	Name	Value			
FillerLine	Equipment Level	Unit			
LabellerArea Area for all labellers	Equipment Class	Packer			
ckerArea a for all packers	Numeric ID	20363			
PackerLine lacker line	Name (ID)	A02C03U63_Packer1			
A02C03U64_Packer2 Packer unit 64	Description	Packer unit 63			
Packer unit 64 A02C03U63_Packer1 Packer unit 63	Is Master Unit	*			
IletiserArea ea for all palletisers ebaggerArea ea for all debaggers					
y 1 Ante site test					



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

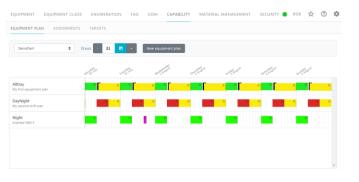
A Enterprise Model Root	State				
Filler Equipment Class for Fillers	Name (ID)	Description			
StateRoot Placeholder for categories and states	Emergency stop	Stop of machine			
PT Production Time	Name	Value			
Production Productionx	Short Stop	0 seconds			
MF Machine Failure	Impact	Bad			
	Producing	Ø			
Emergency stop Stop of machine Tag1 <> 6	Enter Within Category				
Filler in emergency stop	Exit Within Category				
PS No description	Colour	None			
PlaceholderClass Place holder Class1	Manual state determination	n 🗆			
Labeller Equipment Class for Labellers					
Packer Equipment for packers					
StateRoot Piaceholder for categories and					
PT Production Time					
Production Production					
And No description					
Tag1 = 1 No description					
MF Machine Failure					
Emergency stop Stop of machine					

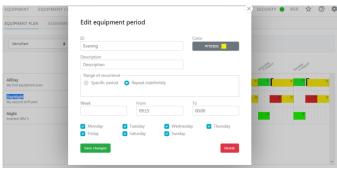


OEE – OVERALL EQUIPMENT EFFECTIVENESS

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

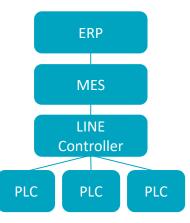






Using line controllers leads to

- 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)





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





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.

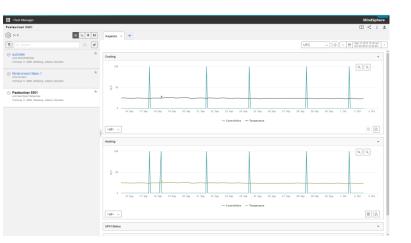




INTERFACE PILOT PROJECT

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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