

Tuning Up-Time for best delivery performance.

Müller Dairy is the large scale and still growing operation in Market Drayton of Molkerei Alois Müller GmbH that processes and delivers millions of pots of their famous yoghurts and desserts annually to UK and Irish food outlets. The logistics involved are a significant issue to the company. The application of Wonderware Historian real-time database with special integration by SolutionsPT to Excel spreadsheets allow continuous fine-resolution monitoring of the entire warehouse system for maintenance and the resulting maximisation of up-time.

“Wonderware Historian allows us to drive towards 100% uptime”.

**Russell Andrews,
Müller Dairy
Warehouse Engineering
Manager**

At first sight the process is simple, you organise the delivery of milk, a wide range of fruit and other ingredients, you then mix, pack and then dispatch to wholesale and retail outlets. However, the scale of the operation at Market Drayton adds significant complication to this simple model, and in the warehouse area this requires constant computer monitoring of all steps and sequences in the large and complex logistics system. Deviance from the production schedule means that a shipment can be late and can thus incur contractual penalties.

The site has developed over the last ten years from a filling & packaging operation with external resources to a complete production unit with its own raw material input, processing, packaging, cold store warehousing and dispatch. The fully automated warehouse

SolutionsPT were asked to re-engineer the maintenance monitoring package when the previous system had hit capacity limits.

The warehouse system was delivered by Siemens Dematic, and was supplied with Wonderware InTouch for operator interface, Siemens PLCs and Phoenix Contact Interbus distributed IO. The system utilises many photoelectric sensors to detect pallet moves and positions.

The previous system involved the direct loading of tag data from Wonderware's InTouch SCADA package into a spreadsheet. The replacement was to place this data into Historian, the real-time database component of Products. Scripts were developed by SolutionsPT Senior Consultant Dr. Geoff Brown that allowed the convenience of a spreadsheet to be retained, but now utilised as a reporting tool for tabular and graphical information.

With production currently in excess of one billion pots per annum, and significant growth predicted, the system had to absorb large amounts of data from hundreds of monitoring points.

The nature of the schedule of production at Müller Dairies is that everything must be done at the planned time. Breakdowns do occur, these can be significant such as a crane gearbox, these being relatively easy to detect and a strategy can be implemented for recovery. The real problem to schedule adherence can be characterised as “a death of a thousand cuts”. With up-time usually in excess of 98%, Müller go for the last 2%, this is an accumulation of “micro-stoppages” that individually amount to nothing. Where the accumulation can be attributed to one particular stage, this receives maintenance



maximising up time

ensures that the scale of production can be handled. Up-time was already high when

attention first.

The system is inherently reliable; the main uncontrolled element that has to be handled is pallet variation, not just in dimensional tolerance but also in the pallet's condition.

The deployment of Historian was a natural one for this kind of application. Its capability to receive large amounts of high frequency data allowed the SolutionsPT System Architect to deliver a solution that would report on the micro-stoppages (having duration of typically less than 2 minutes).

It was relatively easy to integrate Historian into this environment owing to the presence of its shared Products visualisation component, InTouch. It was found that all required data was available in the form of InTouch "tags", therefore no system changes (especially PLC programming) were required. The use of Excel as a reporting tool for Historian was also a

warehouse control station



comfortable solution technically because of the shared Windows-based environment gave ready integration and this also allowed a familiar user interface to be retained.

The main content of the reports is derived from sequences that exceed timing limits. These are prioritised through an algorithm that totals their effect in reducing up-time, this, combined with Operator feedback, directs the maintenance resource to being deployed on the most effective tasks. The fine resolution of the data has the additional benefit of a problem being cleared completely rather than in a manner that would probably require further troubleshooting. The Excel reports can be parameterised by the maintenance staff to give them a tailored view of the data according to the particular need.

This deployment of Wonderware Historian allowed for current and future expansion and for developments to be implemented using Wonderware SCADAAlarm software to allow direct text messages to be placed on maintenance engineer's telephones.

Thus Historian makes a contribution to Müller's target of 100% uptime, greatly facilitating schedule adherence. The constant automatic monitoring of hundreds of points and timings allow a moderately-sized maintenance team to stay on top of the job. Russell Andrews, Müller Warehouse Engineering Manager, says, "Historian allows us to drive towards 100% uptime".

high bay warehouse



Wonderware UK wishes to thank the following company for its valued contribution to this success story...

Müller Dairy

www.mullerdairy.co.uk



© 2009 by SolutionsPT Ltd. All rights reserved. No part of this document may be reproduced, stored in or introduced into a retrieval system, or transmitted in any form or by any means (electronic, mechanical, photocopying, recording or otherwise), or for any purpose, without the express written permission of SolutionsPT Ltd.

Invensys, Wonderware, Archestra, InTouch and SCADAAlarm are trademarks of Invensys plc, its subsidiaries and affiliated companies. All other brands and product names may be the trademarks or service marks of their respective owners. Wonderware United Kingdom & Wonderware Ireland are trading names of SolutionsPT, an independent Wonderware software distribution partner. All rights reserved.

Contact SolutionsPT for information about software products for industrial automation.

SolutionsPT

Wonderware United Kingdom and Wonderware Ireland, Unit 1 Oakfield Road, Cheadle Royal Business Park, Cheadle SK8 3GX
+44 (0)161 495 4698

info@wonderware.co.uk

www.wonderware.co.uk