WERMA
SIGNALTECHNIK *Success Story*

Breakdown reporting in real time

Continental benefits from WERMA's monitoring system in its logistics operation

Globalisation forces car manufacturers to reduce manufacturing times and costs and to optimise processes continually. The same applies to automotive suppliers who have to give special consideration to their logistics operation to ensure timely supply of parts. The global concern Continental has formulated and applied a "Just in Sequence" philosophy in order to deliver the correct parts in the right sequence to manufacturing. In order to give total transparency to the supply chain operation every shop floor transport vehicle (AGV) is equipped with an innovative signal tower system which transmits wirelessly breakdowns in real time and thus ensures that corrective action can be taken promptly, reducing time lost and cost and optimising transparency of the operation.

### "JUST IN SEQUENCE – THE KING OF SUPPLY CHAIN MANAGEMENT

The principal of "Just in sequence" (JIS), itself a development of "just in time" is being deployed more and more by supply chain management and automotive suppliers in general. It ensures that, quite simply, the right parts are delivered to the right location in the right sequence of the manufacturing process. The benefits of JIS are clear: Reduction in warehousing capacity and material held, flexible manufacturing and assembly, reduction in manufacturing time and optimised costs as production increases.

Continental in Regensburg has organised its total supply chain system according to JIS: Material required by manufacturing is automatically picked from one of the 6,200 locations in the 60 m long and 30 m high bay warehouse. Automated guided vehicles deliver the parts safely to manufacturing.

„BLACK BOX" ON THE TRACKS

12 electric AGVs transport material from warehouse to manufacturing on floor guided tracks continuously in a process where the optimum time from requesting material to delivery line side is set as one hour.

The 130 m long track between warehouse and manufacturing is under the surveillance of a kind of black box idea, as all along the track the status of the AGV is unseen and unknown. If there should be a breakdown on the track in the past it
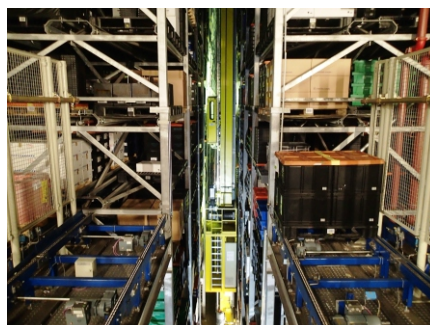
Material required by manufacturing is automatically picked from one of the 6,200 locations in the 60 m long and 30 m high bay warehouse.

could take up to 10 minutes for the AGV controls to report back the breakdown. 10 such breakdowns per week add up to lost time of around 100 minutes. There could be many different reasons for breakdowns – problems with the track such as deterioration of the strip

Image above: 12 electric AGVs transport material from warehouse to manufacturing. If there should be a breakdown on the track in the past it could take up to 10 minutes for the AGV controls to report back the breakdown.

CONTINENTAL REGENSBURG:

Continental based in Regensburg Germany is the location for the Group's largest electronics manufacturing business.

One of over 300 sites in the global group, the company employs at this location 8000 people on a 218,000 square metre site.

The Supply Chain centre established in 2001 processes around 1,500 goods inward receipts and 390 despatches per day. Employing an automated handling system and optimised handling between manufacturing and warehouse the "Just in Sequence Logistics" system offers the best in safety, reliability and quality.

Who is...
Continental

guiding the AGV or sensors on the vehicle being obscured by paperwork.

LOOKING FOR THE RIGHT SOLUTION

Mathias Meier Team Coordinator Industrial Engineering at Continental had been searching for a solution for some time. "Working on JIS principals means that every minute we lose on the track is costly". Solutions using for example WLAN would have been too costly and would have involved an enormous amount of IT installation work. During a roadshow the Regensburg team became aware of the WIN system offered by WERMA and were immediately impressed. "After just one discussion with WERMA we received a sample WIN wireless monitoring kit from them and installed it" comments Meier and goes on "it was so simple to install without any prior knowledge and was up and working straightaway."

By the end of 2014 Continental had installed the equipment on all 12 AGVs deployed at the Regensburg site moving material from warehouse to manufacturing.

The WERMA WIN equipment consists of green and yellow lights on a signal tower complete with a wireless transmitter which acts as a monitoring and data collection system and thus is ideal for the optimisation of logistics and manufacturing operations.

The software supplied with the system shows the current status of the AGV. The screen layout can be customised and permits intuitive and easy to use operation.

THE WERMA SIGNAL TOWER ACTS AS THE INTERFACE

The key to the solution is the signal tower fitted to each AGV which acts as the interface. A transmitter element is simply fitted to a WERMA signal tower with its unique twist and fit locking arrangement. The transmitter transmits the status change of either of the lights on the tower instantaneously to a receiver unit connected to the network or hosted by a local PC.

In the installation at Regensburg the receiver is connected directly to Mathias Meier's PC and

A total of 12 AGVs at Continental Regensburg are fitted with the WERMA WIN system. The automotive industry supplier has been able to reduce reaction time to a minimum thus safeguarding their competitive edge.

whenever there is a breakdown on the line he receives an immediate warning notice on his screen. The system will also deliver an e-mail message to staff on their smart 'phones advising them of the breakdown, enabling them to react to and resolve the issue.

In order to guarantee the integrity of the wireless network along the track, an additional "repeater" transmitter is fitted thus extending the effective transmission range of the system further.

BREAKDOWNS REPORTED IN REAL TIME

Meier has been very pleased with the positive developments since the introduction of the WERMA WIN system. "It is clear that one of the big advantages of the WERMA system is the speed – we get notification of a breakdown immediately as it happens." As the breakdown is notified immediately, reaction can also be immediate and thereby reduce the effective lost time per week of 100 minutes to a minimum.

The data collected by the system is held on an integral database supplied with the software. The comprehensive software modules offers comprehensive analytical and report creation possibilities as well as excellent visual displays thus giving the user of WERMA's WIN system a complete overview of his operation at a glance.
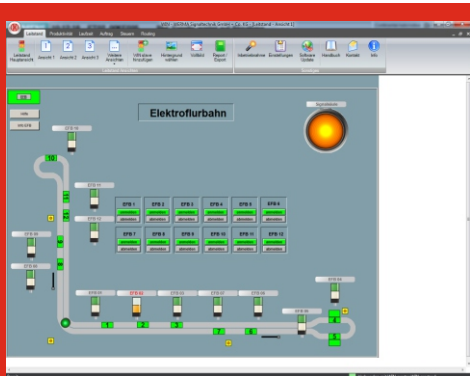
A WHOLE RANGE OF OTHER BENEFITS

Meier comments on the ease of installation and operation of the system, "The WIN software and step by step installation guide make it really easy for anyone to install." No programing knowledge is required to install the software and "even if we had a question there was always someone from WERMA support ready to provide the answer."

In addition Meier was very pleased with the investment cost required – "the complete system cost about €4000 compared with other systems which would have cost between €25,000 and €30,000". It is easy to extend the system "with just a couple of mouse clicks I can add another signal tower and transmitter to the system."

"„It was so easy to install and was up and working straightaway."

Improve transparency, increase productivity, become more flexible, reduce breakdowns as well as saving time and money are just a few of the advantages of the WIN system from WERMA. In no time at all Continental were able to improve the efficiency of the supply chain process, protect resources and reduce costs.

Mathias Meier, Team Coordinator Industrial Engineering at Continental, had been looking for a solution to real time reporting of breakdowns for some time. He has successfully installed the WERMA monitoring system and is very pleased with the improved transparency and time saved in the supply chain process.