

Digitization and Documentation at Magna BDW Technologies

Production Tracking & Tracing by iMes Solutions

MES Software



Logistics



Connect & Visualize



Plant Documentation



Services



RFID solution provides communication via WLAN for contactless identification of materials and equipment and documentation of all processes.

Facts

Since 2019, Plant Historian PTT – Production Tracking & Tracing – has been in operation at Magna BDW Technologies Soest GmbH, one of the largest and most respected global automotive suppliers with 158,000 employees at 340 locations. The German facility with over 500 employees is a leader in the production of lightweight components made of cast aluminium.

The casting plant works with different aluminium alloys in five melting furnaces with 17 casting machines. The exact paths of the melt must be traceable and documented. High temperatures prevail in the foundry. Shocks and vibrations on the transport vehicles as well as numerous metallic components make wireless communication difficult.

Initial Situation

The documentation of the transport paths of the melt was created and filed manually. As the plant was constantly expanding in recent years, the coordination of the transports from the furnace to the casting machine was increasingly becoming a bottleneck. The resources could not be used optimally, the requirements for documentation and traceability of the processes were increasingly difficult to fulfil.

Objective: Replacement of Manual Handling

What was needed was an automated, safe and sustainable solution for the coordination and documentation of alloys, transport vehicles, drivers and furnaces, while strictly adhering to the impeller times. Quality assurance had top priority.

Project Objectives & Requirements in Detail:

- ▶ Automated answer to the question: WHAT was processed WHEN, HOW and WHERE?
- ▶ Optimization of transport processes for more efficient logistics processes
- ▶ Optimal use of resources
- ▶ Documentation and traceability of processes and transport paths in the casting plant
- ▶ Quality assurance by adhering to the impeller times





Statement of the local Team Organizer:

“Our customers expect and demand that we can prove the exact route of the melt if necessary. We now have around 100 transports per shift – a paper-based system was simply no longer practicable. Now we can simply call up the records at the touch of a button.

Our drivers receive their orders from the work preparation department directly on the forklift. Each driver sees which forklift is going where and which order is to be processed. Route planning has become more efficient. The entire process has become more efficient and safer. Documentation is done automatically.”

Technological Requirements:

- ▶ RFID solution providing communication via WLAN, where materials and equipment can be identified without any contact and all processes are documented.
- ▶ Plausibility check: e.g. correct alloy in right dosing furnace
- ▶ Prioritization for the supply of dosing furnaces
- ▶ Tracking & Tracing: recording of material movements
- ▶ Connection between the transport systems and the plant automation system



Production Tracking & Tracing –
Traceability of process data

Decision for Plant Historian PTT:

The Plant Historian PTT RFID system was chosen because this solution works reliably even under the most difficult environmental conditions, such as high temperatures, vibrations on the transport vehicles or difficult radio communication due to metallic components. Plant Historian PTT fully meets all the above-mentioned objectives and requirements.

Plant Historian PTT:

WHAT was processed WHEN, HOW and WHERE?

The system mounted on transport units (forklifts, trucks, electric pallet trucks, etc.) records, documents and controls the removal and the path of the material through the entire production process. The recorded parameters such as date, time, weight, temperature and information on the production units are checked for plausibility. This makes sure that the materials reach the production units intended for them. The transport systems are directly linked to the plant automation system. The work processes are prioritized. The drivers receive their orders from the work preparation directly on the forklift

Benefits:

The use of the “Production Tracking & Tracing” system provided by the iMes Solutions GmbH results in the following benefits for the automotive supplier:

- ▶ More efficient logistic processes
- ▶ Increasing numbers of transports per shift
- ▶ Paperless documentation of the transport paths from the furnace to the casting machine
- ▶ Documentation of transport routes available at the push of a button
- ▶ Better and more efficient route planning
- ▶ High relief of workload and acceptance by the employees, the system actually does everything automatically

Conclusion:

Plant Historian PTT – Production Tracking & Tracing – offers companies in the aluminium processing industry a safe and sustainable solution for the efficient coordination, organisation and documentation of resources, materials, transport systems, furnaces and casting machines.



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