Automotive Use Case

TASK

Reworking Assistance in Car Manufacturing

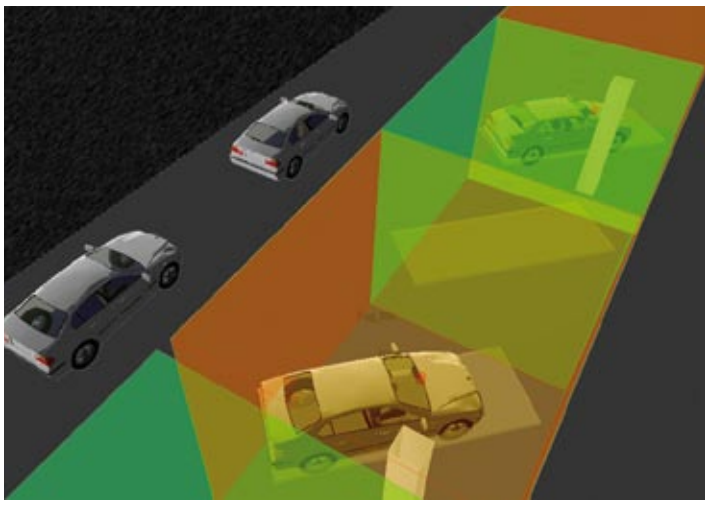
In car manufacturing, reworking involves completing the production steps not finished on the production line and/or rectifying the stages of production that were failed by Quality Assurance. An efficient reworking process demands precise and up-to-date information on the workload of the individual reworking stations and the quantity of cars still to be reworked ("buffer area"). In addition, the cars and the free reworking stations must be located quickly and reliably. This is done in order to maintain the quality of production by examining and analysing key performance indicators, e.g. the average time taken by each car for reworking.

SOLUTION WITH UBISENSE TECHNOLOGY

Continuous Location of Cars in Reworking

Solution Description

The solution is based on the Ubisense Real-Time Location System to track cars and tools with high resolution. This system allows the continuous location of cars to a spatial accuracy of 30 cm and a temporal resolution of 0.1 seconds.
Spatial zones are assigned to the individual reworking stations and to the buffer area for cars that are waiting to be reworked. When a car enters or exits a zone, an event is triggered.



Process Description

- Before the start of the reworking process, each car is assigned an active tag with a unique tag ID. Car ID and car type are assigned to this tag.
- Every car tag is positioned in exactly the same place on the car e.g. centrally underneath the windscreen.
- In the entire reworking zone, all cars are now automatically located with high spatial accuracy (30 cm) in real time and on a continuous basis.
- If car 4711 enters the reworking zone X, an event is triggered. The event can be visualised directly on the Ubisense software platform (in the adjacent graphic e.g. by the colouring of the corresponding zone) and can also be evaluated by third party systems.
- The spatial results allow the rapid and reliable location of cars and of free parking spots.
- In addition, analyses can be carried out on the length of time cars spend at the reworking station or in the buffer area or on the average workload of the reworking stations.

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