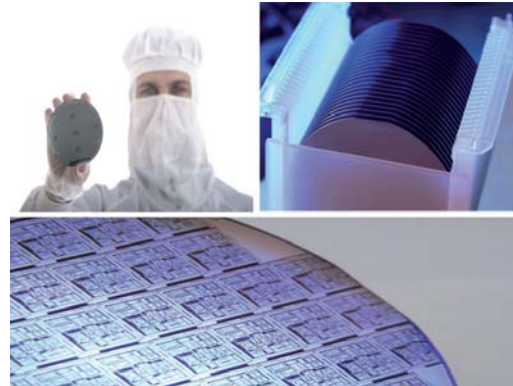


The Challenge

Managing Wafer Production

Semiconductor Manufacturers offering a broad and complex spectrum of products face the challenge to implement a flexible and transparent production process including dedicated production logistics. European facilities producing custom chips (mass production is left to Asian facilities) have to handle many differing, small lots, e.g. one facility manages around 750 products in 400 production steps for each product using 600 different tools and machinery scattered in multiple buildings. The challenge is on the one hand to cope with many changes of the work-flow and on the other reduce idle times of machinery as well as production errors due to the highly valuable raw material.



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The Solution

Tracking wafers along their process cycle in the fab

Parts of the solution

Ubisense tags are mounted on either cassettes or boxes and on the metal carts used for wafer transportation. Tags are allocated the Wafer ID's using Ubisense API's which prepare an easy interface to MES and ERP. Each cassette or box is automatically allocated the cart it was put in using spatial context of the Ubisense Software Platform. The full solution to manage wafers that is beyond the basic knowledge of the wafer's location is enhancing the possibilities for managing wafer production:

Lot location

Real-time location tracking reduces searching time for wafers. At the control console of the MES the next job is indicated. This includes the cassette/box ID to process as well as a map showing the location of the individual cassette/box. In addition the number of the cart it was put in is also given. The tag attached to the individual cassette/box will flash and buzz so that it can easily be detected on the cart

Processing errors

Automated alert if a wafer gets to a workstation in the incorrect sequence. Workstations have declared a virtual buffer zone around them. If a tag approaches the station (i.e. it is inside the buffer zone longer than e.g. 5 sec) which is not allocated the cassette/box of the following job an alert is raised at the control console of the MES.

Excessive Cycle times

Long dwell-time at a single station causes an alert which escalates over time. If a tag is inside the workstations buffer zone longer than a defined max dwell-time for that specific station e.g. 8 min an alert is raised at the control console of the MES.

Additional benefit

Additional benefit is gained by tracking personnel inside the production area:

- Resource Assignment
- If specific jobs need a certified operator nearby to perform the tasks of the job, an alert is raised at the control console of the MES if there is no certified operator within the buffer zone of the workstation. The nearest certified operator is then identified and sent a message. The tag will blink and buzzer.
- Authorization
- Personnel can be given different security admissions. Restricted areas can be set up. The Ubisense Software Platform controls the access of these zones and raises an alert if a person not permitted to enter the zone gets inside this zone.

Business benefits

- Reduced search time and decreased losses
- Increased throughput

About Ubisense

Ubisense is the world leader in Precise Real Time Location Systems, tracking unlimited numbers of people and objects in any space of any size. With unmatched 15cm 3D tracking accuracy and high reliability, its acclaimed open standards technology platform gives enterprises the power to bring visibility and control to previously intractable business processes. Together Ubisense consulting and its partners, such as IBM, Atlas Copco, Lockheed Martin and Raytheon deliver geospatial and RTLS systems, pioneering innovation whilst reducing costs, gaining competitive advantage and improving safety for companies across all vertical markets. With over 400 customers worldwide including BMW, Caterpillar, DHL, Duke Energy, Deutsche Telekom, US Army; Ubisense is revolutionising industries today. Visit www.ubisense.net

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