



open**ZDM**

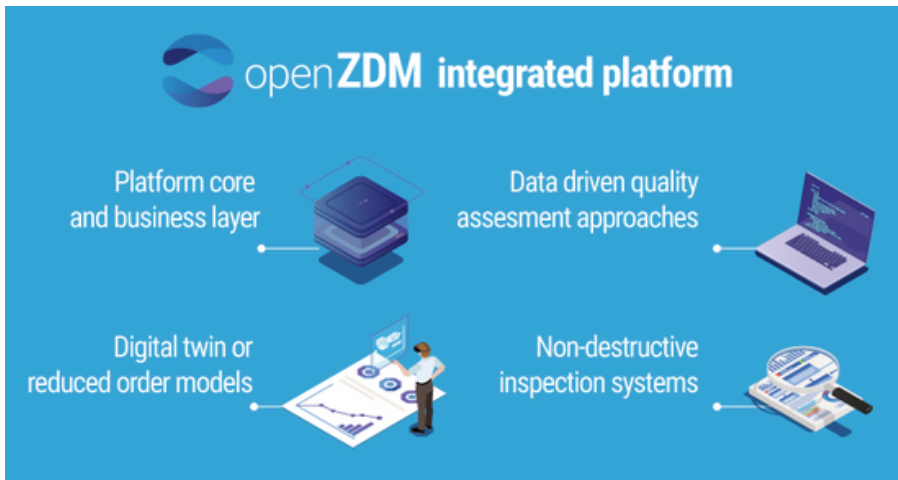
Open platform for realizing zero defects
in cyber-physical manufacturing

PRESS KIT

About openZDM

openZDM is an initiative **co-funded by the European Union** that will develop and demonstrate an open platform designed to realise **Zero Defect Manufacturing**.

The platform integrates advanced ICT solutions and innovative non-destructive testing, thus setting the foundations for a **solution applicable to a large variety of manufacturing industries**.



In that way, the **openZDM** project will increase the flexibility of an organisation and its capacity to innovate and continuously control its quality.

While increasing company's production efficiency and competitiveness, **openZDM** also addresses the **grand challenge of sustainable manufacturing**: to deliver high-quality products while minimising waste and energy consumption.



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openZDM's innovative methodology will test and finalise the technological tools through **five industrial pilots from different industrial sectors, in real-life operational conditions**; and then facilitate the adoption of the innovative platform solution.

VDL Weweler - trailing arm production process demonstrator

This industrial pilot envisages the use of several non-destructive inspection methods and a Digital Twin model of the production process. To keep track of the important production parameters, in real-time, and with the support of AI modules to identify anomalies and adjust the production parameters accordingly. The proposed approach will allow to adjust the production process to deviations or abnormal patterns ensuring the production of high-quality products while enabling a zero-defect manufacturing process.



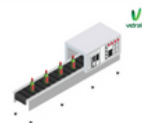
Volkswagen Autoeuropa - vehicle body shop and final assembly demonstrator

This use case will be demonstrated considering the process related with car alignment. The main goal for the demonstrator is that, through the data analytic results and the digital twin, the non-compliant products will be detected earlier in the production line and therefore reduce the number of products that will need to be aligned. This objective is expected to be achieved by gathering data in order to correlate and predict process faults and thus allowing real-time interventions in order to prevent the defects related to gap and flush and their propagation to downstream processes.



Vidrala - bottle manufacturing demonstrator

Glass container manufacturing is an extremely cost-conscious process where a significant amount of products are defective due to limitations in materials involved, energy usage, and process steps driven by simplicity and cost-effectiveness more than by performance. Thermal imaging of the finished bottle provides a significant amount of raw data, that well used can give insights into both process parameters (temperature) and finished product (thickness). Open ZDM will use this information to improve the process both upstream (gob forming) and downstream (glass distribution).



Sonae Arauco - melamine surfaced board manufacturing demonstrator

This use case will be demonstrated at the Linares plant and specifically on the process of melamine surfaced wood panels. The main goal for the demonstrator is the reduction of defects which will consequently increase the throughput and decrease the production costs. This objective will be achieved by getting the insights on the key parameters that lead to defects and by adjusting these same parameters to the provided recommendations. It will also recommend the machine parameters for the new products.



Aptiv - EV battery production demonstrator

This use case will develop vision in VIS and IR range for monitoring the laser welding process. In the VIS range, high-speed images of the molten pool can be acquired, and phenomena and geometrical features of the melt pool, keyhole, spatters and plasma plume distribution can be effectively monitored. In the IR range, it is possible to evaluate the thermal profile of the weld, which is crucial to assess its quality. The vision systems will embody AI-based algorithms for defect detection and process characterization, which running on an edge device, equipped with a powerful GPU.



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openZDM Press Area

Get access to all necessary information that supplements the journalist's story and enhances the understanding of the **openZDM** project.

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