

STREAM-0D project to develop a solution for Zero-Defect Manufacturing successfully comes to an end

STREAM-0D is a project that received funding from the EU's Horizon 2020 under the public-private partnership 'Factories of the Future'.

Zaragoza, September 30th, 2020 - The European project STREAM-0D (Simulation in Real-Time for Manufacturing with Zero-Defects) for the development of a Zero-Defect Manufacturing (ZDM) solution officially ends today, 30 September 2020, 48 months after its inception. STREAM-0D, which initially should have ended in March 2020, has obtained an extension of 6 months due to the COVID-19 emergency: the last months have been useful for completing the activities on the production lines of the end-users involved in the project.

The main challenge of the STREAM-0D project was to allow industries to adjust the manufacturing processes in real-time, introducing smart decisions based on the forecast of simulation models based on Reduced-Order Modelling (ROM) techniques and data-driven models (DDM), which are mathematical models able to predict potential defects and failures based on machine learning algorithms.

STREAM-0D's primary goal was to increase production efficiency with high savings in time and costs, in order to shift the manufacturing process towards a ZDM approach. In detail, by the implementation of the STREAM-0D solution in the production line, manufacturers will be able to:

- monitor and adjust the production process in real-time through simulation-based control algorithms and data-based decision tools, so that the product performance indicators fit the target specifications;
- increase production flexibility by decreasing the time needed for the adjustment and of new designs;
- boost the efficiency of the line by achieving a reduction in rejected units and material;
- reduce production costs and increase production rates.

«STREAM-0D has allowed us to develop and put into practice the revolutionary idea that was conceived four years ago: the monitoring, control and adjustment of production lines through simulation models running in real-time», says José Ramon Valdes, project coordinator with ITAINNOVA.

«The project partners have implemented and demonstrated the different techniques and modules of the STREAM-0D solution, and developed a step-by-step methodology that will facilitate the application of this ZDM solution to other production lines in the future».

The STREAM-0D project has been conducted by a consortium of ten partners coming from seven European countries: three research institutes or universities, four SMEs, and three large industries that acted as end-users, making their production lines available for the application of the solution. In parallel with the technical tasks, the consortium also performed the activities that will pave the way for the future commercialization of the solution.



The results that came out of the implementation and demo tests of the STREAM-0D solution in the production lines showed impressive figures, with reductions in scrap rates, rejection rates, downtime, end of line tests and costs associated to these aspects well over the targets set at the beginning of the project.

More details will be disclosed after the 8th of October, 2020, when the work and the results achieved by the consortium will be discussed in front of the European Commission officer during the final review of the project.

About STREAM-0D

STREAM-0D has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No. 723082. The project consortium was successfully coordinated by ITAINNOVA (Spain) and was composed also by Fersa Bearings (Spain), IES (UK), STAM (Italy), Standard Profil (Spain), ZF (Germany), École Centrale de Nantes - ECN (France), Laboratory for Manufacturing Systems & Automation - LMS (Greece), CETRI (Cyprus), Day One (Italy).

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