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Dummy certification

Thanks to an automated crash dummy certification system, tedious and time-consuming preparation of ATDs can now be done with ease



Crash tests are becoming more and more complex. Not only has the testing of single components become more detailed, but more sensors are now needed in full vehicle tests, able to measure to a greater degree of accuracy. This has impacted both R&D and regulatory test procedures. To get comparable results, all 26 types of dummies in use today must be verified in a certification process.

To obtain full certification, the THOR dummy, for example, has to undergo some 24 tests. During fabrication, calibrated sensors are mounted into the dummy so that calibration at the customer site is not needed. The focus for certification is on verifying all biomechanical properties. This is done by a certified laboratory or by the test facility itself.

In crash testing, time is money. A calibration of a THOR dummy typically takes about two weeks, plus the time it takes to be shipped

By speeding up certification, the overall test process is streamlined and as a result, customers can reduce their products' time-to-market

to the certification laboratory. One solution might be to buy another dummy – but at a cost of around €1m (US\$1.17m), it's not an ideal solution.

To expedite the certification process, ATD-LabTech offers customers the ability to conduct certification tests at their own site without assistance. Certification can be performed automatically using the compact and fast test stands, removing the need for shipment to external laboratories, ultimately reducing turnaround time. The Pendulum Drop and Compression system in combination with the Impact Test System, for example, can perform all required tests for re-certification of a THOR dummy.

In addition to this, the evaluation of these signals must comply with current

legislation too. This is where X-Crash from MeasX comes into play.

MeasX is known for its test data management and rig solutions. Knowledge of analysis systems and vehicle safety acquired over decades has been continually fed into the company's X-Crash software. The current version supports Euro NCAP, US NCAP, ECE, ADR, ANCAP and many more vehicle safety regulations. The adoption of FE models for HIC calculations make this tool a quasi-standard product.

Since it was first developed, dummy calibration has been a vital part of X-Crash, sold as an optional extra. Able to produce standard reports and with up-to-date regulations implemented, X-Crash ATD provides all that is needed for evaluation during the certification process.

Using the X-Crash ATD software and ATD-LabTech's test rig service, customers can profit from a smoother evaluation process and a harmonized workflow. The

turnkey solution is built for laboratories, Tier 1 suppliers and OEMs requiring a more integrated and standardized solution for certification of crash test dummies.

ATD-LabTech was founded in 2015 by a team of experts specialized in mechanical engineering, electrical engineering and measurement technology. ATD-LabTech is an ISO 9001:2015 certified test equipment manufacturer. All its systems also comply with ISO17025:2015.

Says Gerhard Pfeifer, MD of ATD-LabTech, "Our customers often use X-Crash. The well-known and intuitive user interface and continuous adaptation of the standards within X-Crash, both for calibration and real crash testing, are huge benefits of the software."

Dr Joachim Hilsmann, managing director of MeasX, adds, "Having ATD-LabTech on board extends our partner network in the area of dummy calibration. Our customers profit from highly integrated solutions like this." ◀

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