From Sylke Becker

Tel. +49 69 756081-33

Telefax +49 69 756081-11

Email s.becker@vdw.de

**German machine tools are safe**

**VDW Technology Conference at the METAV will be presenting the results of a study on the safety of control systems in machine tools**

**Frankfurt am Main, 21 January 2016.** – “German machine tools are safe when they are designed in conformity with the currently applicable standards and used for their intended purpose.” This is the firm conviction of Eberhard Beck from the Index-Werke in Esslingen, who heads the Control and Systems Technology Working Group in the VDW (German Machine Tool Builders’ Association), Frankfurt am Main. “The consistently decreasing accident figures in connection with machine tools are cogent evidence of this,” says the engineer.

The reason why the discussions are still continuing nevertheless is the ISO Standard 13849-1, which since the beginning of 2012 has entailed a change-over in the implementing provisions for the EU’s Machinery Directive on Control Systems to the principle of “Functional Safety”. This meant throwing overboard the long years of practical expertise possessed by experienced design engineers in the companies concerned. Previous qualitative design methods based on the principle of “proven-in-use” safety engineering are required to give way to a probabilistic risk assessment, which is calculated using what is called a “performance level”. “Evidencing this, however, is significantly more elaborate and much more complicated, meaning more expensive, than previously, often without achieving any concomitant gains in safety,” says Dr. Alexander Broos, Head of Research and Engineering in the VDW. “Even worse: the risk assessment is not unambiguous, but in its basic assumptions is open to interpretation.” It is frequently impossible to plausibly reconcile empirical results with the target values of the standard. And the probabilistic calculation sometimes leads to underestimation of the machine-specific control chains, and thus calls into question the “proven-in-use” safety level as a whole. “It’s disastrous when due to these inconsistencies the impression arises that there is even the tiniest doubt as to the safety of machine tools, simply because an illogical numerical risk model is to be adopted,” adds Dr. Broos.

**Safety-relevant control system failures very improbable**

In order to counteract this, the VDW has commissioned a large-scale study. “The aim was to thoroughly scrutinise the sector’s customary design methods for machine tools, and to determine the calculable performance levels of existing control chains,” says Nika Nowizki from the Institute for Machine Elements at Stuttgart University, who has been responsible for this project. “In this case, you see, the quantitative proven-in-use safety level of the standard PLC could be evidenced on the basis of long years of field data,” adds Nika Nowizki.

“The study’s results confirm that the safety of standard PLCs in specific cases lies within the framework of the normative requirements involved, and in fact is in some cases better,” reports a gratified Eberhard Beck from the VDW’s working group. His company had provided the field data concerned. “In particular, the reliability of control systems that have not been specifically designed to handle safety-relevant functions is being increasingly questioned. The history of the field data available, however, shows that safety-relevant failures of control systems practically do not occur.”

**VDW Technology Conference at the METAV 2016**

The results of the study will be presented in detail under the aegis of the VDW’s Technology Conference on “Safety engineering in metal-cutting machine tools”, to be held at the METAV 2016 in Düsseldorf on 23 February. Other presentations by distinguished speakers at this event will deal with the dimensioning of separating guards, ongoing trends and developments in terms of guidelines and standards, plus numerous empirical reports from the field. Machinery manufacturers, component vendors and occupational safety experts will be illuminating the broad spectrum of topics involved from different perspectives.

They are all designed to communicate more confidence again in the actually very good safety levels of existing machinery concepts to staff from R&D and quality management, operations and planning, plus those responsible for risk and hazard assessment at manufacturers and users of machine tools.

**Information box**

What: VDW Technology Conference on “Safety engineering in metal-cutting machine tools”

When: 23 February 2016, 10.00 a.m. to 3.00 p.m.

Where: Düsseldorf Exhibition Centre, CCD East, Room R

Further information: www.vdw.de/leistungen/metav\_tt\_2016/metav\_tt\_2016\_einladungsflyer.pdf

Participation fee: 150 euros plus VAT

Registration: Ingrid Kirchner, i.kirchner@vdw.de

**Background to the METAV 2016 in Düsseldorf**

The METAV 2016 – the 19th International Exhibition for Metalworking Technologies – will be held in Düsseldorf from 23 to 27 February. It will be showcasing the entire spectrum of production technology. The principal focuses are machine tools, production systems, high-precision tools, automated material flows, computer technology, industrial electronics, and accessories, complemented by the new themes of Moulding, Medical, Additive Manufacturing and Quality, which are now permanently anchored in what are called “areas” with their own nomenclature in the METAV’s exhibition programme. The METAV’s target group for visitors includes all branches of industry that work metal, particularly machinery and plant manufacturers, the automotive industry and its component suppliers, aerospace, the electrical engineering industry, energy and medical technologies, tool and mould-making, plus metalworking and the craft sector.

You will find texts and pictures about the METAV 2016 on the internet under [*www.metav.de*](http://www.metav.de) in the Press Service. You can also visit the METAV through our social media channels

 [*http://twitter.com/METAVonline*](http://twitter.com/METAVonline)

* http://facebook.com/METAV.fanpage*

** [*http://www.youtube.com/metaltradefair*](http://www.youtube.com/metaltradefair)

* https://de.industryarena.com/metav*