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News Review

Robotics and Digitization: on the way to Man-Machine-Interface

Sensor technique and information technology define newly the duties of engineers in the traditional branch of engineering. Every sixth person engaged therein is an engineer and its share should still increase. The German industry is in an average condition and absolutely as competition capable marketable – said by Hartmut Rauen, the representative of executive of VDMA. The German manufacturers have increased their turnover in 2015. As per statement of the branch unit it invested 218 milliard Euro and with that 2% above the level in the 2014. Also the export goes well. In the past year the machines and the annexed components worth 156 milliard Euro have been sold abroad. The export quota amounted to 78%.

The qualification in the branch is high. About 17% of more than one million employed in mechanical engineering and allied construction are engineers. As well as absolutely expressed on percentage the share of the engineers to the total employment, number will grow as said by Rauen. Engineer competency is the basis for the innovation capacity of the firm.

Two technical fundamental trends are recognizable – said VDMA chief executive Rauen. One this is the sensor technique which becomes always better and cheaper the other one is ITT which renders it possible to develop new business models. With that many duties

fall on to the firms (undertakings) which have to do with communication profile position. A certain comprehensive arrangement as the engineer is already important. It must not be that at the moment every engineer can do in depth programme.

He must however understand what the IT implements deliver – explains Rauen. Digitization, robotics and automation are the designate themes in mechanical and allied engineering and the recent Hannover fair impressed on that. That is reflected also with turnover and employment. As per statement of VDMA technical unit robotics and automation the turnover increased in 2015 in economic branch to 12 milliard Euro that is 1.5 milliard Euro more that in 2012. The number of the employed was close to 52000 in 2015, the export quota to 55%. With the hype in robotics and automation pushed in the background that implements and products also in future must fulfill their duties in the analog world. As for example there is also a full internetted driverless vehicle with carriage work/trackwork, body work, motor and gear. The old mechanical engineer had produced bug in the VW. The new mechanical engineer must however, manufacture automatic cars, remarked Sabina Jeschke, professor of information management in mechanical engineering in the

RWTH Aachen. Not that what the mechanical engineers have learnt are false or useless but there comes something and with that it goes even before all about IT competencies, because we will experience a worldwide IT driven system – opines the professor.

The way in the future proceeds also on the man-robot collaboration, the cooperation of human being and machines at common work place without isolated protected equipment, Germany counts jointly with South Korea already at present to the countries with the biggest robot density. As per statement of VDMA there are 10000 employed in 292 units that is four times more than the worldwide average. The yearly expert opinion of the Expert Commission and innovation (EFI) expressed criticism that the robots in general in Germany is too much in the automobile engineering succeeded, Patrick Schwarzkopf, the executive VDMA robotics and automation, therefore, wanted not to get quartered. The nonbuckling robots of the automobile factory retain the collection in operation hall, radiation centres, television studios, greenhouses and many other areas. Straight way German robot manufacturers are here outsider – he confirms. The EFI demanded stronger promotion of robot research in Germany is in view of the recovery process of carbon emitting countries like China to call, however by all means.

In order to be able to exist in international competition strengthened it gets onto that to offer solutions which the others did not have. So Heinz-Jürgen Prokop the chairman of the association of German machine tools factories (VDW) outlines job situation of his branch.

The machine tools manufacturers are well advised to widen the viewing angle and think of the production solution in it's entirely. The additive production with which also individualized or complex construction site can be produced plays a big role alone with that. Many manufacturers also see in the hybrid machines the conventional processing method bound with the additive production an option. In the medium, big series and mass production is however still a long way to go, in order to achieve marketable piece cost - announced Prokop.

Anil Kumar Ghosh
Indian Science Cruiser

Source: VDI Nachrichten, 8 April 2016,
Nr 14, Seite 28
