Digital Factory Simulation Tools

Jiří Kyncl
Department of Machining, Process Planning and Metrology, Faculty of Mechanical Engineering, Czech Technical University in Prague, Technická 4, 166 07 Praha 6, E-mail: jiri.kyncl@fs.cvut.cz

The article deals with the use of Siemens digital factory concept for production capacity planning. In the increasing competitive environment of globalized world economy, pressure to grow effciency of production pro-cesses and systems greatly increases. In addition the increasing cmplexity of product requires appropriate as well as-sembly and logistic processes as production process planning and control. These requirements in the production process planning and cotrol may be due to its complexity filled only with appropriate instruments provided by comprehesive concept of the digital factory, which allow effective use of information on production, promote collaboration between departments and provide relevant data to anyone who needs it. This paper describes implementation of digital factory simulation tools for the production process planning and control at our industrial partner. This approach to production capacity planning using the digital factory concept is unique in the Czech Republic.

Keywords: Digital factory; simulation; optimization; production process control; production process planning

Acknowledgement

This work was supported by the governmental funding of Technological Agency of Czech Republic – project number TA04020658.

References

[1] BERANEK, L.; VOLF, L. & MIKES, P.: Coordinate Metrology Education Using Virtual CMM, *Annals of DAAAM for 2011 & Proceedings of the 22nd International DAAAM Symposium*, ISBN 978-3-901509-83-4, ISSN 1726-9679, pp 1323-1324, Editor B[ranko] Katalinic, Published by DAAAM International, Vienna, Austria 2011.

[2] KOSTURIAK, J., GREGOR, M., MIČIETKA, B., MATUZSEK, J.: *Projektovanie výrobných systémov pre 21. storočí*, Žilinská univerzita, 2000, pp. 397, ISBN 80-7100-553-3

[3] VLČEK, R.: *Management hodnotových inovací*. Praha, Management Press, 2008, ISBN 978-80-7261-164-5

[4] ZELENKA, A.: *Projektování výrobních procesů a systémů*. ČVUT v Praze, 2007, pp 136, ISBN 978-80-01-03912-0

[5] ALUKAL, G., MANOS, A.: Lean Kaizen. *Quality Press*, Milwaukee, USA, 2006, pp. 174, ISBN 978-0-87389-689-4

[6] FIALA, P.: Projektové řízení, modely, metody, analýzy. *Professional Publishing*, 2004, pp. 276, ISBN 80-86419-24-X

[7] GÜNTHER, H.-O., TEMPELMEIER, H.: *Übungsbuch Produktion ung Logistik*. Springer, 2006, pp. 248, ISBN 3-540-25704-7

[8] STASIAK-BETLEJEWSKA, R. (2010). Construction Product Quality Improvement with Applying Production Problems Analysis. In *Manufacturing Technology*. Vol. 15, No. 5, ISSN 1213-2489

[9] BORKOWSKI, S., STASIAK-BETLEJEWSKA, R. (2010). Analysis of anti-corrosion coating process on steel constructions. In *Manufacturing Technology*. Vol. 10, No. 10, pp.27 – 29. ISSN 1213-2489

Paper number: M201674