Dear NetExCNCer,

Wishing you a very Happy New Year!

The objective of the newsletter is to inform the community about the developments in the context of CNC both in New Zealand and overseas.

In this issue, you will learn about the recently held the “International Symposium on Interoperable Manufacturing & Technologies” at the School of Engineering, University of Auckland. The latest STEP-NC Machine ver. 8.19 has been released with new features developed. The International STEP-NC demonstration at the National Institute of Standard and Technology (NIST) is also updated.

The newsletter is published on a bimonthly basis and contributions are welcome.

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Update on the International STEP-NC Demonstration, National Institutes of Standard and Technology (NIST)

Currently, the STEP-Manufacturing team has been discussing several scenarios that will be used for the demonstration at NIST, Gaithersburg, Maryland, USA. Some of the scenarios include:

- **Usage of STRL concept by STEP-Tools Inc.** The purpose is to link processes and resources over the network using a link called STRL (STEP-NC Resource Locator). A feature is added to the Moldy part and a request to plan tool paths for the feature is sent to a remote site as an STRL. The remote site generates tool paths and sends the result back as another STRL. The home site then simulates the new program with the new feature and after verification the part is machined. For the demonstration, the main Moldy program may be stored as an STRL at Boeing. The amended Moldy program with the new feature will be stored at NIST and the system to create tool paths for machining the new feature will be at the University of Bath.

- **Tool wear scenario** was found to give more business impact compared to the energy scenario since it was observed that at 12 cent per kilowatt hour the maximum power consumption for a 20KW spindle costs $2.40 for an hours machining. For most shops, this cost is trivial compared to the cost of tooling which can be as much as $200 per hour for some materials. Automated tapping devices, high cutting speed and hard material will probably be used to show the tool wear during the demonstration.


Miscellaneous

**Research Publications**

Journal Special Issue

A Special Issue on “Distributed and Collaborative Manufacturing for the 21st Century” has been published in International Journal Manufacturing Research. Vol. 5 No. 1, 2010. There are

- An internet-oriented management and control system in a distributed manufacturing environment, José L.N. de Souza Jr., Evandro L.S. Teixeira, Alberto J. Álvares and João C.E. Ferreira
- Machine model-based remote maintenance and fault analysis system for custom-made CNC machines, Julio Garrido Campos, Ricardo Marín Martín, Juan Sáez López and José Ignacio Armesto Quiroga
- Intelligent and cooperative manufacturing planning, W.D. Li and L. Gao
- STEP-NC-compliant machine automation to support sawblade stone-cutting machining, Julio Garrido Campos and Xun W. Xu
- Implementation of real-time shop floor manufacturing using RFID technologies, Yingfeng Zhang, George Q. Huang, T. Qu and Pingyu Jiang
- Feature and Product Markup Languages in service-oriented CAX collaboration, A. Khaled, Y-S. Ma and J. Miller
- Design and simulation of an adaptive and collaborative assembly cell, Shadi Keshavarzmanesh, Lihui Wang and Hsi-Yung Feng
- Data integration from product design to assembly planning in a collaborative environment, Xiumei Kang and Qingjin Peng

For more information and contributions

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