Dear NetExCNCer,

This is the fourth issue of the NetExCNC Newsletter. 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 find information about the international STEP-NC demonstrations by STEP-Manufacturing Group. An overview of the outcomes of last meeting in Renton are provided. Then, the information about the next demonstration in September at the University of Bath is given.

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

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**International STEP-NC Demonstration, Boeing, 2009**

**Boeing, Renton, May 2009**

An international demonstration about the latest developments of STEP-NC standard was proposed by STEP-Manufacturing team (ISO TC184 SC4 WG3 T24) on May 14-15, 2009 at Boeing’s Renton site (Washington). Two objectives were associated to the meeting:

- Having multiple sites machine the same part from the same STEP-NC code and
- Showcasing the abilities of STEP-NC standard for machining mould and dies.

Before the meeting, the same STEP-NC program was used to machine the so-called “moldy” part on different machine tools (3-axis, 5-axis, parallel kinematics, etc.), using different CNC controllers at Boeing (USA), NIST (USA), CCAT (USA), Al’s Rod shop (USA), KTH (Sweden), Scania (Sweden) and University of Bath (UK).

Tolerance data importation from CAM software were also tested using ISO 10303-AP203e2. Then, each part was measured to verify its accuracy using laser scanning and touch probe. Data from different sensor types were comparable. This offers a promising future for integrating on-machine inspection workingsteps into the STEP-NC part programs.

Some outstanding issues were noted, e.g. the management of cutting tools data and the optimization of cutting parameters.

Next STEP-NC Demonstration, Bath, UK September 2009

The next International demonstration will take place at the University of Bath in the UK in the week of September 21-25. The demonstrations will focus on machining two parts. The first one will be the continuation of the “Moldy” project, based on the results of the last demonstration in Renton. The objective will be to decrease the machining times by optimizing the programming parameters and improve the portability of the complete manufacturing environment.

In parallel, another manufacturing scenario will be carried out, i.e. the “Boxy” part. Inspired from a gear box, it requires multiple set-ups. Three objectives are associated with this project:

• machining a real part by using STEP-NC set-up data,
• employing tolerances information at different stages of the process, and
• testing the efficiency of STEP-NC drilling, tapping and boring operations.


Miscellaneous

Invitations

• Call for contributions and participation at the Industry Day on Manufacturing Interoperability -- Featuring New Technology, New Data Model and New Industrial Practices. 7 December 2009, University of Auckland, Auckland, New Zealand

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Research Paper

• Developing ISO 14649-based conversational programming system for multi-channel complex machine tools

Book Release


For more information and contributions

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