

New Supercomputer Now in Operation at Railway Technical Research Institute

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The Railway Technical Research Institute (RTRI) replaced its supercomputer with a new and more powerful model in December 2005. For many years, RTRI had successfully used a supercomputer for various types of research, including analysis of the behavior of Shinkansen and conventional railway infrastructure during earthquakes, analysis of vibrations of superconducting magnets for maglev, analysis of pantograph-related noise, and determination of optimum pantograph shape.

A committee of researchers who use supercomputers regularly was organized to select the ideal supercomputer to replace RTRI's existing one. Keeping in mind the fact that the new supercomputer would be used for RTRI's future research projects, the committee considered hardware specifications (including required number of CPUs), memory capacity, computing speed, software specifications

(including compatibility with existing software), and cost. The committee finally decided on a model that would permit use of existing calculation packages and original RTRI software without major modifications, that would provide far greater computing capabilities, and that would offer much better cost-performance than the existing model.

The newly introduced supercomputer is an SGI Altix 3700 Bx2 having 112 Intel Itanium® 2 processors (64-bit CPUs) with a 1.5GHz 4MB cache. Main memory capacity is 224 GB and theoretical peak performance is 672 GFlop/s. Auxiliary storage devices are a 3 TB magnetic disk unit and a 6 TB magnetic tape unit for backup. The operating system is Linux® OS. Applications include ELF/MAGIC, FLUENT, I-DEAS, IMSL, MARC, NASTRAN, PAMCRASH, S-FLUSH and SYSNOISE. FORTRAN 77 and FORTRAN 90 are also applicable. The supercomputer is compatible with programs developed by RTRI.

The new supercomputer has a theoretical peak performance about six times greater than the former supercomputer. Main memory capacity is about three times greater. Since the new supercomputer is capable of performing complicated calculations with higher speed and greater accuracy, we are confident it will make our R&D efforts even more successful.



WCRR 2006 Coming Soon to Montréal, Canada

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7th World Congress on Railway Research

June 4 – 8, 2006

**Fairmont Queen Elizabeth Hotel
Montréal, Canada**

The 7th World Congress on Railway Research (WCRR 2006) will be held in Montréal, Canada from June 4 to 8, 2006. The World Congresses' roots go back to when the Railway Technical Research Institute (RTRI) hosted the International Railway Research Seminar in Tokyo in 1992. Since then RTRI has participated as a member of the WCRR Organizing Committee and Executive Committee. It also served as the WCRR Secretariat to help plan and organize the Congress in Tokyo in 1999.

The WCRR 2006 theme is "Progressing Together." Participants from about 30 countries will present results of their research (some 300 reports), exhibit rail technology, and take part in technical visits. RTRI plans to present 22 reports and organize a display booth with the JR Group. Please visit the WCRR 2006 Secretariat's website www.wcrr2006.org for more information on the Congress. We hope to see you in Montréal this June!