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**NETHERLANDS RAILWAYS REALIZES SAVINGS OF 20 MILLION EUROS A YEAR
WITH ILOG OPTIMIZATION TECHNOLOGY**

Improved Service, Operating Efficiency Up to 6 Percent Due to Better Resource Utilization

PARIS – March 25, 2009 - ILOG®, an IBM Company, today announced that Netherlands Railways is using the IBM ILOG OPL-CPLEX® Development System to enhance its rolling stock allocation for better resource utilization. Using ILOG optimization technology as a key component of its custom Rolling Stock Allocation application (ROSA), Netherlands Railways has been able to improve its operating efficiency by as much as six percent, netting the railway a cost savings of over €20 million annually. As part of another scheduling application that also uses IBM ILOG CPLEX, the railway has improved on-time performance for more than one million daily rail passengers. The application of these tools at NS was awarded with the 2008 Edelman Award from the Institute for Operations Research and Management Sciences (INFORMS) which recognizes outstanding examples of operations research (also commonly referred to as management science) around the world.

Netherlands Railways manages more than 4800 trains per day in the Netherlands through a 2100 kilometers long network of 279 stations. In the period before 2006, the railway experienced a significant traffic increase - the passengers traveled a total of 15.4 billion kilometers - and was operating the busiest national railway network in Europe. It was determined that more accurately matching trains to expected user traffic was crucial to keep costs down and service on time, leading to the search for a new, automated solution for scheduling their operations.

Using IBM ILOG CPLEX, ROSA uses departure and arrival times, as well as passenger traffic forecasts, to assign trains and passenger cars to timetable services more accurately. The system automatically creates a schedule faster, with fewer mistakes than manually built ones.

To build ROSA, Netherlands Railways developers used the IBM ILOG OPL-CPLEX Development System to build, test, tune and deploy an IBM ILOG CPLEX model built using IBM ILOG OPL Development Studio. That OPL model fully captures the company's operations, including

rail networks, stations and trains, and address constraints that included passenger preferences, seasonal variations in traffic and transportation regulations. Several objectives were taken into consideration, including operational costs, service quality and the reliability of the railway system. Adding to the complexity is the diversity of the rolling stock, which varies greatly in design, serves rural and urban areas, and runs on electric and diesel lines. In all, about 56,000 variables and 32,000 constraints had to be accommodated. IBM ILOG CPLEX was used as the engine for computing optimal solutions to these complex operating models built in OPL.

An adapted model of ROSA handles the refinement of this plan in later stages to address seasonal and unexpected variations in traffic, enabling Netherlands Railways to rapidly model a problem and test several approaches to solving it and to shorten lead time. In addition users are able to make explicit choices between costs and customer satisfaction, and planners can focus on exceptional events.

“Netherlands Railways used IBM ILOG CPLEX to enhance its rolling stock allocation planning for better resource utilization, resulting in a cost savings of over 20 million Euros annually. CPLEX is also used for time table scheduling and has helped improve on-time performance for more than a million daily rail passengers,” said Mr. Wim Fabries, Head of Logistics. “ILOG’s optimization technology helped us to achieve our primary goal of improving service but has also had a significant impact on our bottom line in terms of operational cost savings. This resulted in winning the INFORMS 2008 Franz Edelman Award for outstanding practice in Operations Research and Management Science.”

“With traffic congestion on the rise, there’s a growing need to build smarter transportation systems around the world,” says Keith Dierkx, IBM's Global Rail Leader. “Netherlands Railways is using ILOG optimization technology to automate processes to improve service for passengers and commuters while significantly reducing overhead costs.”

For more information on ILOG, an IBM Company, please visit <http://www.ilog.com>

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