2013 RAS Problem Solving Competition

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The 2013 Problem

This year the participants were asked to build a model which can be used to identify a plan that optimizes the operations of a railroad yard. The goal of an operations plan is to minimize the total waiting time of railcars in the yard and maximize the total number of railcars processed during a certain period. Building a classification yard operations plan is challenging as it covers many interrelated operations and decisions, such as the sequence of inbound trains' disassembly, the sequence of outbound trains' assembly, sorting plans at the hump, block-to-train assignment plan for classification tracks, etc. Optimizing the operations plan of a classification yard is very important for a railroad company as it helps fully utilize the limited resources of its rail network. Visit the competition web site for additional details: http://www.informs.org/Community/RAS/Problem-Solving-Competition
Total cash award for this year's competition is $3,750: **First Place: $2000; Second Place: $1,000 , Third Place: $750.**

The Response

The competition was very well received internationally. We had a total of 45 teams registered. Members of these teams were from Chile, China (Mainland), France, India, Israel, Korea, Russia, Singapore, Taiwan and The United States . A total of 12 teams submitted their reports. We had a heavy exchange of questions and answers during the period in which the teams were working on solving the problem. Special thanks go to Xuesong Zhou (Arizona State University), one of the problem owners, for responding to questions in a timely manner. The teams proposed a number of innovative optimization and simulation models to solve the problem.

Finalists

We would like to thank all of the participating teams for their hard work and contribution to this competition. The judging panel went through a rigorous process in order to objectively rank and select the finalist teams. This was not an easy process since the quality of the work presented was high. Therefore this year, in addition to the three finalists listed below, we are listing three teams which deserve to be honorably mentioned in this competition.

These three finalists will make a presentation at the INFORMS Annual Meeting during the RAS Problem Solving Competition Session on Sunday, October 6, from 11:00 – 12:30 in the Minneapolis Convention Center, Room 211C. The three finalist team reports will be made available on our website (www.informs.org/Community/RAS/) soon after. We invite you to come and support these bright minds.

Hai Wang, Maokai Lin, **Massachusetts Institute of Technology**, USA
Jiangang Jin, Shanghai Jiao Tong University, China

Wenliang Zhou, **Lianbo Deng, Zhao Zhou, School of Traffic and Transportation, Central South University**, China

Setareh Borjian, **Krishna Selvam**, **Massachusetts Institute of Technology**, Cambridge, MA, USA

Honorable Mention

The following are the three honorable mentioned teams for the 2013 RAS Problem Competition.

I-Lin Wang, Wei Lee, Chiao-Yu Liao, National Cheng Kung University, Taiwan

Yihuan Shao, Lunce Fu, Tianyi Pan, **University of Southern California**, USA
Tianyi Pan, **University of Florida**, USA

Natalie Simpson, Ryan Hauser, **University at Buffalo**, NY, USA

Recognition

We thank the sponsors BNSF Railway, CSX Transportation and Norfolk Southern, the problem owners Xuesong Zhou and Edward Lin and the judging panel chair Sandra D. Eksioglu. We also thank the organizing committee members — Behnam Behdani, Burak Eksioglu, Kevin Crook, Jagadish Jampani, Shrikant Jarugumili, Krishna Jha, Ilya Lavrik, Yudi Pranoto, Guvenc Sahin, Kamalesh Somani, Alper Uygur, Yu Wang and Bin Yu — for their guidance and suggestions.

Quick Quote

I asked a man in prison once how he happened to be there and he said he had stolen a pair of shoes. I told him if he had stolen a railroad he would be a United States Senator.

- Lee Iacocca