ANNOUNCING:
2016 Problem Solving Competition

Operation research to Railroad Problems for Fun and Prizes!

1\textsuperscript{st} Prize $2,000

2\textsuperscript{nd} Prize $1,000

3\textsuperscript{rd} Prize $750

Integrated train timetabling and maintenance scheduling

Train timetabling problem is a crucial determination of a railway service, and has attracted a lot of attention so far. Careful balancing of services and operational times will ensure fast and effective transportation services. Train will need to use track to move; their maintenance is vital, for ensuring tracks are in appropriate states for running trains. Conducting maintenance tasks needs a blockage of tracks which means that there is complete capacity breakdown of the tracks and no train is allowed to run on the tracks during the maintenance time duration.

Timetable and infrastructure maintenance

This year’s RAS problem solving competition addresses the integration of those two problems. How to route trains through a complex railway network, with limited infrastructure capacity, while planning maintenance tasks?

The network infrastructure layout, specifications of the required traffic, and characterization of the maintenance works are given, as well as infrastructure and operational constraints. The goal is to determine a schedule in a network and a given time window some running traffic, minimizing their travel time in the networks, while respecting (and planning) some possessions due to maintenance works.

Participants will be building a scheduling model able to determine times and operations for trains and maintenance operations. The criteria which will be used to evaluate the solutions proposed include the objective function (total travel time of trains), the solution approach used, the practical applicability, and the required computational time.

Apart from the cash prizes, the first prize winner’s contribution will also be considered for publication in Networks. RAS will write a letter in support of the winning team, if the team wished to publish this work, in hopes that this letter will facilitate the review process.

Visit the competition web site for complete problem details:
http://www.informs.org/Community/RAS/Problem-Solving-Competition