

Rules of the challenge ROADEF/EURO Air Liquide 2016

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Contents

1	Main rules, goal and spirit of the challenge	1
2	Who can participate ?	2
3	Questions, communications and collaborations	2
4	Intellectual property	2
5	Phases, dates and prizes	3
6	Using external solvers	4
7	Subject, instances and checker: discussions and updates	4
8	Meta-rules	4

1 Main rules, goal and spirit of the challenge

1. The ROADEF/EURO 2016 challenge dedicated to inventory routing problems in collaboration with Air Liquide is an optimization contest that offers prizes to the most successful teams.
2. The problem, subject, instances and checker are proposed by the organizers.
3. Participants compete to propose the best algorithmic solutions to solve the problem.
4. Participants are also welcome to provide feedback to the organizers concerning the subject, instances, checker and rules of the challenge. Such feedback might improve the 2016 edition, as well as future ones.
5. Please participate in the spirit of the rules, and ask questions on the forum if you are unsure or if you want to share some information.

2 Who can participate ?

1. A team can be composed of any number of persons.
2. One person cannot be a member of more than one team.
3. Each team can submit only one program.
4. A team cannot compete for the junior prize if one or more of its members has defended a Ph.D. on December 31st, 2015.
5. Persons employed by Air Liquide cannot participate.
6. Anyone having signed contracts with Air Liquide before July 1st 2016 to work on topics directly related to the subject of the challenge cannot participate.
7. The organizers cannot participate, but members of their respective laboratories can participate. In such cases, the organizers do not share with them any information related to the challenge unless it has been previously communicated to all participants.

3 Questions, communications and collaborations

1. The organizers communicate information on the forum and on the webpage of the challenge.
2. Participants must ask questions on the forum. Questions asked by email might be ignored by the organizers.
3. Organizers answer to the questions on the forum.
4. Any forum participant can read all questions and answers.
5. When necessary, organizers propose to the authors of the questions or to all participants, to send them details (in particular solution files), in order to provide an appropriate answer to the question and to improve the challenge. Such information provided by the participants to the organizers remains secret to all other participants.

4 Intellectual property

1. Participants have intellectual property on their computer programs developed during the challenge. Air Liquide and any third party may use information provided by the participants through technical reports, scientific papers and oral presentations, but cannot use a computer program without the agreement of the team who wrote this program.
2. Participants to the challenge cannot claim to have a partnership or a contract with Air Liquide, even if they win the challenge. They can only claim to be participants (respectively qualified / winner) if it is the case.
3. Air Liquide may (but has taken no engagement to) sign contracts with some participants after the challenge. Any such contract would be independent of the challenge.

5 Phases, dates and prizes

The challenging phases as well as the result and announcement phases are announced on the webpage. All prizes will be paid when the challenge is over. All announced prizes are part of a fixed prize pool, prizes will hence be shared in cases of tie.

The official deadlines are available here:

<http://challenge.roadef.org/2016/en/schedule.php>

The official prizes announcement and results are available here:

<http://challenge.roadef.org/2016/en/prizeResults.php>

- **The qualification deadline**
 - Each team submits a computer program, solution files, computational results table and a short (2 pages) description of the method, including the characteristics of the computer used, operating system and software setup configuration.
 - The teams will be ranked based on the solution files output by their program, ran by the organizers on instances A .
- **Qualification results and start of final phase**
 - The target of the committee is to qualify between 10 and 25 teams. One major goal of the committee is to exhibit a qualitative gap between the worst qualified teams and the best non qualified teams. Moreover, the committee reserves the right to qualify any team whose solver exhibits good behaviour on some instances, even if it fails to find good/feasible solutions on some other instances.
 - The qualification phase will be performed based on the Version 1 of the scope and Instances A . The ranking at the end of qualification phase will be based on a set of Instance X -V1. The final phase will be based on an extended scope called Version 2 and associated instances B and X -V2.
 - Instances B will be released to participants.
- **Final phase - deadline**
 - Qualified teams submit the final version of their program, a table of computational results on instances B , an extended abstract (5 pages max.) describing the method, including the characteristics of the machine used for their results.
- **Final results**
 - Qualified teams are ranked according to the solution files output by their program, ran by the organizers, using the following ranking function. The global score of team T is the sum of its scores over the instances $B \cup X$. For each instance I , if the program of T is still running at the time limit or if the output solution is infeasible, then the score of T on I is equal to the score of the empty solution file. Notice in particular that the empty solution file is feasible for each instance in $B \cup X$.
 - Instance set X will be released.

- **The scientific prize**
 - Qualified teams who wish to compete for the scientific prize are invited to submit an article to a special issue of an international journal dedicated to the challenge following a call for papers at the end of the challenge.
 - At the end of the qualification phase, selection criteria will be provided to the contenders who wish to submit scientific papers and new methods.

6 Using external solvers

1. The following solvers can be used (your code must be able to run on these specific versions).
 - CPLEX 12.6
 - XPRESS 7.8
 - Gurobi 6.0
 - Local Solver 5.5
2. Requests for other solvers (via the forum) will be examined by the committee.
3. The challenge does not provide licenses, which must be acquired by the participants for their own tests.
4. The challenge computers have a licence for each solver cited above for its own tests.

7 Subject, instances and checker: discussions and updates

1. Participants are welcome to report and discuss on the forum, any doubt/error/question raised on the subject, the instances and the checker.
2. The organizers try to answer to the participants as fast and accurately as possible.
3. The organizers try to avoid making changes in the subject, the instances and the checker, unless they find it necessary for the relevance of the contest.
4. In order to help the participants managing their project, the organizers try to communicate immediately changes that are already decided but that will become effective only on announcement dates.

8 Meta-rules

1. The organisers reserve the right to change the rules, the subject, the instances and the checker at any time. Any change will be communicated to all participants through the forum.
2. The organisers reserve the right to disqualify any participant or team from the competition at any time if the participant is considered to have worked outside the spirit of the competition rules. The organisers' decision is final in any matter.