

Scenario:

- We are given a set of users. Each user proposes a list of pairs (*location, utility*) corresponding to the *utility* s/he gains for visiting a given *location*; we cannot trust on the *utility* values declared by the agents; Moreover, each user declares the maximum payment s/he might be willing to provide to the mechanism; we can trust this declaration.
- The distance between any pairs of locations is known, so that we can compute shortest paths.
- We are given a vehicle that can be picked in a given location, that can travel along other locations and that eventually must return to the starting point; hence, the vehicle performs a tour.
- The vehicle can accommodate a fixed number, say k , of users; moreover, we have a bound on the maximum length (expressed in km) of the tour.
- Performing the tour gives rise to two costs: a cost proportional to the length of the tour and a fixed cost.

Goal:

- The system has to select the user that will perform the tour; it has to define the locations that will be visited by the tour; and it has to define the payments that are charged to the users.

Constraint:

- No user can be charged more than the maximum payment s/he has declared.

Desiderata:

- The cost of the tour which is proportional to the length in km has to be fairly distributed among the users on the vehicle, in a way that no agent has arguments to object.
- The fixed cost has to be distributed among the agents based on the declared utilities, and by implementing a mechanism that leads to truthfully declare the utilities.