# Biding Algorithm (problem definition)

November 21, 2020

Our goal is to maximize our profit margin $M_p$ over all $n$ elements in the set $T$ of all $t_i$ auctions. Where $r(t_i)$ is the revenue from an auction and $c(t_i)$ is the cost that carrying out an auctioned contract. In an adversarial setting where the contract is awarded to the lowest bidder (*closed-bid first-price reverse auction*).

$$M_p = \sum_{t_i \in T} r(t_i) - \sum_{t_i \in T} c(t_i) \tag{1}$$

For a given *task* our agent computes the following informations :

Cost of adding a given task to the plan : $c(t_i)$