Our negotiation strategy has mainly three part which are accepting strategy, offering strategy and opponent based strategy. First part is accepting strategy which is based on checking utility of bid from other agents and time. We limit the time as 55 because in 5 second agent should have to decide quickly. Therefore, when the negotiation starts, it provides an offer from BiddingStrategy class. It sorts the all possible bid and returns the best bid for agent. In 55 second, the agent gets the bid from opponents and makes a decision that they are acceptable or not. If they are acceptable, we stores the bids in hasmap. After 55 second, opponents bid utilities’ are acceptable, then our agent will accept. If they are not acceptable, the agent provides bid from the sorted hasmap which are opponents’ bids. When we apply this rule, we think about the social welfare and we decided to do this. Also when we getting these bids from opponent , we also care about our utility ,so that we limits the minimum utility as 75%. All in all, when we design the strategy, we don’t only focused on overall utility we also focused on social welfare.

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|  | MERCURY | PARS | GROUP4 |
|  | 0,657042169 | 0,778671634 | 0,796740939 |
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| PARS | ATLAS | GROUP4 |
| 0,788729307 | 0,742374855 | 0,728404783 |

|  |  |  |
| --- | --- | --- |
| ARES | PARS | GROUP4 |
| 0,709604206 | 0,764388226 | 0,809360138 |