

# An efficient mechanism for real-life multi-agent projects

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## **Abstract**

Assume that we want to complete a multi-agent project, and there are several selfish agents to be potentially hired. Each agent has a hidden type, which is a stochastic decision tree describing the dynamics of his working process with chance events, decisions, costs and results. To organize the project efficiently, it is essential that the agents should make each of their decisions considering the types and earlier chance events of the other agents. However, these types and chance events are private information: each agent is like a black box which just communicates and outputs a result in the end. In this paper, we present an efficient and incentive-compatible mechanism for choosing the agents to hire, synchronizing their work based on their unverifiable reports, and determining the payments. This mechanism assumes no prior distribution of the types. Then we show a collusion resistant, but not always efficient version of this mechanism.