Abstract

Contract net protocol is widely used in multi-agent systems because of its high extensibility and flexibility in a dynamic environment. However, many shortages exist while applying the traditional contract net protocol in multi-agent systems, such as rapidly increasing of the negotiation cost along with the system's dimension, no guarantee of the negotiation quality and difficulties in adapting the dynamic environment, etc. A multi-agent negotiation model based on the acquaintance coalition and the extended contract net protocol are presented to improve the efficiency of negotiation. The structure of the multi-agent negotiation model is given to support the extended contract net protocol. The acquaintance coalition policy, the trust degree parameter and the adjustment rule are introduced and used to construct the extended contract net protocol. Thus it enhances the time efficiency for the negotiation process between contractor and the bidder.Main contribution of this research is the efficient contract protocol which helps agents to acheive efficiency during the task allocation method.