

A Multilateral Negotiation Method for Software Process Modeling*

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Abstract. Currently most software process modeling approaches are predefined, not automatically adaptive to different software projects, and provide little support for development team formation with task and resources allocation in real environments. Based on our ten-year working experience for software organizations, we propose an agent-based multilateral negotiation model MNM-PA to support dynamic software process modelling and ease the work of team formation. MNM-PA brings the following advantages: (1) the software processes are not predefined; (2) the software processes are for given projects and with development teams, allocated tasks and task constrains. MNM-PA is an extension of the classic one-time bidding contract net protocol. It defines the main components to model a complete negotiation process for software process construction, especially including the negotiation strategies. MNM-PA is implemented and experimented in a software process management tool namely SoftPM, which is used in more than 100 software organizations in China.

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