

Norm Enforcement Mechanism

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Norms are generally recognized as standards of behaviour and effective means to control and coordinate agents' activities. The development of a multi-agent system requires organizing the system in such a way that the standards of behaviour, represented by a set of norms, are actually followed by the agents. In this talk, I present an operational approach for organizing the overall multi-agent system behaviour by means of a norm enforcement mechanism. Such a mechanism monitors the behaviours of agents, evaluates if they violate any norm, and intervenes by responding to the norm violating agents. For many applications perfect monitoring or response is not always available or feasible. This presentation provides a logical analysis of imperfect monitor and response capabilities. The analysis can be used to determine if and to what extent a given set of norms can be enforced by a mechanism with imperfect monitor or response capabilities. If time allows, I will also present a game-theoretic approach to analyse the effectivity of norm enforcement mechanisms. This allows determining if a norm enforcement mechanism can bring about the desired overall system behaviour assuming that individual agents act in accordance with their design objectives.