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Modeling network controller decisions based upon situation awareness through agent-based negotiation.


Summary: The Dutch railway traffic control is in an urgent need for innovation and therefore turns to gaming simulation as a platform to test and train future configurations of the system. The presence of relevant participants is necessary to keep the fidelity of the gaming simulation high. Network controllers are often needed in such games, but are expensive, scarce, and often have limited action, thus making their involvement less than desirable. To overcome this, the current paper introduces the use of intelligent software agents to replace some roles. The cognitive construct of situation awareness is required to model the evaluation of an offer in a negotiation setting, in which a situation awareness model (SAM) is introduced for evaluating offers in complex and dynamic systems.

Keywords: Railway Transportation; Network Control and Management; Negotiation; Situation Awareness
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