

Building the model right and building the right model: Verification and validation of the recreation simulation model MASOOR

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Abstract — MASOOR (Multi Agent Simulation Of Outdoor Recreation) is a multi-agent recreational behaviour simulation model. MASOOR is developed to evaluate both existing management policies and effects of various management actions. In addition, it can serve as a communication tool in participatory processes. By visualizing recreational behaviour on maps the model helps different stakeholders (recreationists, managers, scientists) to interpret the complex patterns of visitor use and support the discussion among those stakeholders. However, it is important that the model is verified and validated. Verification can be defined as the process of testing whether or not the logic of the model is acceptable. It involves checking that the model behaves as expected and it is sometimes referred to as testing the *inner validity* of the model. Verification deals with building the model *right*. Validation relates to the extent that the model adequately represent the actual situation that is modeled. Validation deals with building the *right* model. Validity can be ascertained by comparing the output of the model with comparable data collected from a real-world system using a various statistics. In this paper we verify MASOOR by an assessment of recreational path use at different numbers of replications. We validate MASOOR by comparing the modeled output with real world data. Finally, we focus the validation on specific behavioural rules such as preference for path type and chunking direction

Index Terms — Behaviour simulation, MASOOR, recreation model, behavioural rules and preferences.



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