

Agent-Based Dam Monitoring

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SYNOPSIS. The monitoring of security relevant structures is a task of growing importance in civil engineering. Large structures such as bridges and dams demand the use of precise measuring systems and the collaborative work of engineers, geologists and geodesists. Considering the time and labour consumed by the acquisition, processing and analysis of measured data, concerned authorities, operators and companies are trying to automate these operational procedures. The existing computer-based solutions focus on remote monitoring and neglect a collaborative analysis of measured data. However, an appropriate and effective monitoring system must conduct all of the tasks performed by experts involved in monitoring. The Institute of Computational Engineering of the University of Bochum, in co-operation with the Ruhrverband (Ruhr River Association), is developing a dam monitoring system based on software agents. The nucleus of the system's conceptual design is based upon the autonomous and collaborative analysis of measured data, associated with intelligent agents adopting the part of the experts generally involved in dam monitoring.