

Web GIS Technologies in Advanced Cloud Computing Based Wildfire Monitoring Systems

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Abstract

Forest fires are natural phenomena that cause significant economic damage. Apart from preventive measures, early fire detection on one side and quick and appropriate intervention on the other, are measures of vital importance for wildfire damage minimization. Therefore the wildfire monitoring and surveillance is quite important wildfire prevention measure, traditionally based on human wildfire surveillance, but modern ICT technologies offers today more advanced, video camera based wildfire monitoring systems. The last generation of such systems has two important features, first they are usually integrated with Geographic Information Systems (GIS), because the complete information about wildfire is not only its existence, but also its position, and second, todays wildfire monitoring goes “in cloud”, which means that they belong to cloud computing or WIS (Web Information Systems) application. The paper describes an example of such advanced cloud computing based wildfire monitoring systems, where GIS, or more preciously Web GIS system, is used not only for fire location determination, but also to improve cameras manual control and to enhance distance virtual video presence on wildfire field. The described system is not just another laboratory prototype; it is a real time working system, widely used in Croatian National and Nature Parks and Istria County.

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