

Optimizing the routes of mobile agents in a network using a multiobjective travelling salesman model

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This work is a result of the consortium formed by the company Smart-geo Solutions, Lda., in the role of leading developer, and by the University of Coimbra. The main goal of the project was the development of an innovative Geographic Information System application, which operates on a Web platform. This application should incorporate a functionality that allows to optimise, according to multiple criteria, the routes of mobile agents in a network. The problem was modelled using a multicriteria version of the travelling salesman problem to obtain the efficient routes. Several new heuristics were proposed whose performances were evaluated and compared with classical approaches. It was also proposed a new dominance criteria relation which allows to speed up the algorithms to search efficient solutions. The proposed algorithms allowed us to explore new solutions that had not been found with classic ones.