Doctoral programme in Computer Science MAP – i
PhD Thesis proposal

TITLE
Decision-Making Software System for Wastewater Treatment Plant Design

KEYWORDS:
Systems optimization, Software engineering.

OBJECTIVES
Development of an integrated system, a decision-making software system, for the optimal selection of Wastewater Treatment Plant (WWTP) processes, in terms of minimum cost, for portuguese industry.

DESCRIPTION
The regions densely industrial, as the region of Vale do Ave, have highly polluted watercourses due to large amounts of effluent discharges. Urgent measures demand drastic changes and innovations in wastewater treatment and reuse. However, the increase in the costs associated with these changes may threaten the survival of many industries. A rigorous economic analysis of all WWTP processes, and the corresponding optimal design in terms of minimum cost, are imperious and have been successfully carried out recently [1-5]. The challenge now is to develop an expert system of decision support that allows the user to select the best alternative to install or reformulate a WWTP, given the characteristics of the influent and the demanded quality of the effluent, defined by environmental laws. A user-friendly mode of output will be required. Hard copy output both in graphical form and in the form of numerical data is expected.

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