# Computational Intelligence techniques for the optimization of resources of passenger transport companies

## Short description (what need was solved?)

The generation of optimized routes for one or more bus lines is considered. It is required the adjustment of the schedules of the same ones based on restrictions by periods of time as it can be minimum number of services or maximum frequency and minimizing the costs of operation derived from the number of buses or necessary drivers. This is an essential problem for passenger transport companies.

## What service(s) provided?

Evolutionary algorithms, memetic algorithms and metaheuristics allow to approximate the problem of vehicle routes, handling restrictions, minimizing the fleet of vehicles, crew ...

We offer as a service the design of a software for dealing with these problems, containing: a) efficient algorithms, b) specific algorithms for the problem, considering the specific restrictions, c) the interaction with the user that allow the local optimization of improvements introduced by the expert to the solutions, and d) also the use of solutions proposed by the expert as starting point of the metaheuristic algorithms.

## Relationship with digitization

The passage from experts who continuously design scheduling to software that allows the automatization of the process, making multiple analysis of solutions and contexts (constraints) is of great importance in the sector.
It is a case of digitization, from a manual process to the use of intelligent technologies to solve the problem.

## Customer, details

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