

The thesis addresses a complicated real-world scheduling problem from the space operations environment. The Mars Express Orbiter scheduling problem was first presented as a challenge by the European Space Agency. The thesis compares two different solutions.

The first solution is an ad-hoc scheduler that is based on scheduling actions into a set of time windows and heavily utilizes local search techniques. The second solution models the problem as a constraint satisfaction problem (CSP) and uses the SICStus Prolog constraint programming solver to find a solution.

Both schedulers are experimentally evaluated and the results are compared. Both approaches were able to provide a working solution. The conclusion however states that the more generic CSP based approach was capable of producing higher quality schedules even without a complicated heuristic. It however to compute the schedule for a small subset of inputs. On the other hand, the ad-hoc scheduler was capable of solving larger inputs but the produced solutions are not as good.