SUMMARY (English)

The road connection between Barcelona and Lleida has had several itineraries along the history. These alternatives have been changing in function of the invested capital by the different administrations and concessionaries. It makes a change in the election of the route by the user according to his preferences and his perception about the cost of use. As user of these routes, I have the intrigue to know if the efficiency of this corridor can get better. Because the routes seem to be clearly qualified to do it though they have not just given a satisfactory response to the users.

The itineraries are the toll road of North-East (AP-2 together with AP-7) and the freeway of North-East (A-2, unfolding of the former N-II). This corridor, that it is communicated by these two big axes, presents inequalities in the levels of service and growth because they have a different management and investment.

A clear example of this is that all the Catalan toll roads have increased the volume of traffic about 7 % year after year, whereas the AP-2 and the AP-7 in the sections Barcelona-Lleida have experienced moderate growths. Contrary to this fact, with the putting in service of all the A-2 sections, that connects Barcelona with Lleida, the traffic in this route has overcome the initial forecasts, specially of trucks, provoking the construction of the third rail in some sections and a premature deterioration of the asphalt.

For this, the dissertation tries to study the efficiency of the corridor that connects Barcelona with Lleida, proposing measures that help to improve the utilization of the existing routes. Although the technical topics of routes management, it is necessary to notice the environmental effects that this solution can offer. It tries to administer better the existing infrastructures avoiding the extension of routes that have alternatives underused for his high cost of use.

To do an analyze is necessary to known well both itineraries and see how has been the evolution along the history, they average daily intensities, the length, the distribution of the traffic and the population, the type of users, the costs that affect the users and the maintenance, the service level, the accidentality and the need to extend the corridor. The initial information, which I depart, is not very precise in some aspects, having to adopt simplificative hypothesis in some cases to be able to extract results. Though the aim of the dissertation is to do an efficient management of the distance Barcelona-Lleida, it is necessary to think with the distances of more crossed length that contains this one. They also will be affected.

When we have analyzed all the previous aspects, we could do offers. The first one consists in change the direct toll to indirectly. The second one in leaving free the cars that pass in the toll road. The third one in adjust the direct toll to obtain a distribution of 50 %. The fourth one in putting direct toll in both axes and investing in public transport. Finally, the third option, which consist in reduce the toll price to obtain a distribution of 50 %, is the best. With this solution we manage to reduce a bit the AP-2 service level and consistently we also reduce the AP-7 service level without affecting it in excess. The benefit of this reduction is the improvement of the traffic in the freeway. It is not possible to say that this option will increase a lot the traffic in the toll way. But it have to be considered that if the traffic is turned to the AP-2 (which is underused) also it is reverberated to the AP-7, which will increase the traffic shortly with the building of the third rail in the section El Vendrell-Tarragona.

This option recommend the toll reduction from 10'5€ to 4€ for cars and 21€ to 8€ for trucks (year 2006 and travel Barcelona→Lleida). Therefore, in the actuality the toll would have to be 6'45 € for cars and 15'9 for trucks. The difference might be financed with a toll in the shade that can be justified to save the construction of the third rail of the freeway.

It is necessary to think that there are factors that are not quantified, although being the distance for the toll way 9 km longer and more expensive (leaving of side the cost of the toll), some users prefer to circulate along the toll way for the low presence of trucks, the comfort of the tracing, the condition of the asphalt, the presence of radar, etc.