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Planning Catalonia's Airport System Based on Econometric Analysis

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1. BUDGET BRIEFING

This document aims to breakdown all items that contribute to the cost of the project. Therefore, the document presents an array of items that should be considered when planning and building the most efficient Catalonia's airport system. It will be split in two parts: One the first hand an economic study regarding the cost of implementation of the project will be carried out. It will consist of monetizing all actions to take for the scenario chosen to be a reality. On the other hand, this document will also explicit the cost of the redaction of the project, to value the tasks and work that could make possible this thesis.

1.1. Project implementation

The cost for implementing the project it is distributed for the three studied airports contributions. Being the selected scenario to expand the Girona-Costa Brava airport while haltering a major expansion in the Barcelona-El Prat infrastructure, the GRO will have to weight most of the budget, to be able to accommodate the operations and passengers it is expected to have by 2035. All actions considered crucial for this development have been budgeted to give a first approach on the estimated cost.

1.1.1. Girona-Costa Brava airport actions

The GRO airport will endure the biggest transformation of all Catalan airports, as it has to accommodate up to almost 20 million passengers by 2022. The different building and transformation projects are described and budgeted next:

Items GRO	Investment (€)
Land-side actions	292.000.000
- Remodelling and ampliation of current terminal building	225.000.000
- New parking facilities	10.000.000
- Connection with the high-speed rail network (AVE)	55.000.000
Air-side actions	29.450.000
- Rapid exit taxiway	2.200.000
- New terminal aviation platform	15.000.000
- Relocation of hangars	5.250.000
- Relocation of control tower	7.000.000

Airfield adequation	24.868.000
- Relocation of support services (Energy generators, etc.)	4.140.000
- Compliance with European regulations (nº 139/2014)	20.728.000
Terrain acquisitions	20.000.000
Maintenance	50.000.000
TOTAL GRO	414,32 M€

Table 1: Total GRO investment for the studied configuration (Source: Own Elaboration)

1.1.1. Barcelona-El Prat airport actions

The BCN airport, even though it does not face a major reconversion, still must be allowed for some budgeting margin, for enhancing the airfield structure and improve the operations rate per hour. This actions also include the implementations of the necessary means to reduce the distance between aircrafts for landing and take-off.

Items BCN	Investment (€)
Air-side actions	39.000.000
- Creation of by-pass taxiway around 07L heading and complete enhancing capacity operations	39.000.000
Maintenance	100.000.000
TOTAL BCN	139,0 M€

Table 2: Total BCN investment for the studied configuration (Source: Own Elaboration)

1.1.1. Reus airport actions

Similar to the BCN airport, the Reus facilities won't undergo a big remodelling. As a new terminal building has already just been inaugurated, along with some other air-side capacity enhancer actions, the main budget saves for this infrastructure is for maintenance purposes.

Items REU	Investment (€)
Maintenance REU	15.000.000
TOTAL Other	15,0 M€

Table 3: Total REU investment for the studied configuration (Source: Own Elaboration)



1.1.1. Total implementation budget

The final budget for implementing the chosen scenario is finally revealed next:

Items	Investment (M€)
GRO investment	414,32
BCN investment	139,0
REU investment	15,0
TOTAL	568,32 M€

Table 4: Total project development investment (Source: Own Elaboration)

1.2. Project redaction

Considering the mean income for engineering aeronautical projects for 1-3 years of experience, next is specified the fees applied to the development and redaction of the thesis.

Item	Total hours worked	Mean fee	Item cost
Project introduction and first approach	20h	15€/h	300€
State of art research	50h	15€/h	750€
Prognosis models development	120h	15€/h	1800€
Design of scenarios	70h	15€/h	1050€
Development of chosen configuration	40h	15€/h	600€
Thesis redaction	50h	12€/h	600€
Verifications	10h	12€/h	120€
TOTAL	360h		5220€

Table 5: Budgeting of the project redaction (Source: Own Elaboration)