

THE EURAM, GATEWAY TO EUROPE
REFLECTIONS ON THE *WHITE PAPER ON INFRASTRUCTURE IN THE EURAM*

Contribution of the Observatory of the Mediterranean Euroregion (EURAM) to the Consultation process on the future policy of Trans-European Transport Networks

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1. TOWARDS A STRATEGIC VISION OF TRANSPORT INFRASTRUCTURE IN THE EURAM

1.1. *Introduction*

The *White Paper on Infrastructure in the Euram* brings together the problems and aspirations of the Mediterranean Arch Euroregion (*Euroregió de l'Arc Mediterrani*, or Euram, in Catalan) regarding the provision of infrastructure, as they were expressed by experts and entrepreneurs in debates held throughout 2007 and 2008: precisely the years when the current economic crisis emerged. This Euroregion, which includes the Valencian Country, Catalonia, the Balearic Islands, Andorra and French Catalonia, is a continuous geographical area, with strong economic and cultural ties and, taken as a whole, has a weight comparable to the most populous and wealthiest regions in the European Union. Each of its regions – in the administrative sense; although in Andorra's case, it is organised as a state – belongs to different regional associations (the Working Community of the Pyrenees, the Pyrenees-Mediterranean Euroregion, the Four Motors for Europe, the Conference of Peripheral Maritime Regions, etc), but the Euram, as the process of producing the *White Paper* has demonstrated, has particularly robust economic and social ties, and also a common culture. The premise of the *White Paper* is that these ties should not only be maintained but strengthened for the benefit of all the people who live and work there and of the enterprises supporting their economic progress. Therefore, it is important to analyse the infrastructure endowment of the Euram, to determine if it is sufficient to meet future needs, or whether it is necessary to make major investments and, in this case, to determine the most suitable management strategies to carry them out.

In the Euram, and especially in the regions that lie within Spain, the issue of infrastructure provision was left aside for many years, despite its importance both for economic and social development, and for regional integration. We will not enter into the reasons for this lack of interest, particularly by the politicians involved in the Spanish transition to democracy, but it should be noted that there have always been attempts by Catalan, Valencian, Balearic, Andorran and Roussillonese [French Catalan] specialists to promote ideas and launch proposals regarding major

public infrastructure, that is, those public works with high potential impact. As we shall see later, these initiatives focused on the Mediterranean regions and their links with the rest of Europe and the north of Africa,

The *White Paper* process, through open debates, has been able to gather, in a systematic way, the economic and social considerations, including its impact on development, of the provision of infrastructure made by numerous associations in the Euram. The debates that have taken place in all the big cities in the Euram have brought to light the investment proposals made over the years and the present perception of these proposals by those who better understand the social and economic evolution of their regions and their need for infrastructure.

The reflections made in the present document – a follow-up on the *White Paper* – aim to provide a strategic vision that focuses on the relationships within the Euram and globally between the Euram and the rest of the world.

We shall therefore first take a quick look back at the work done so far in this respect; then, we will define the socio-economic framework of the Euram in order to depict the role of infrastructure, particularly transport infrastructure and analyse its demand and supply. From a strategy to strengthen both internal cohesion within the Euroregion and its position in the European as well as in the global context, we will argue for specific lines of action regarding the different transport modes and analyse the potential means to finance the required investments; we will conclude by discussing the guidelines that should be followed to bring about the desired situation. That situation can be described, in a nutshell, as the availability of a transport infrastructure endowment allowing the Euram to respond to the challenge of its international integration and projection.

1.2. The pioneering initiatives for regional structuring in the Mediterranean

Proposals on transport infrastructure - and on regional affairs in general - extending beyond the state borders could only take flight after the integration of Spain in the European Community. Among the boldest initiatives in this regard, for the Mediterranean area, we may mention the creation, around 1986, of the CITRAME, the Interregional Commission for Transport in the Mediterranean, which, from Barcelona, began the first studies on the topic from a multi-regional perspective. The CITRAME, framed within the European regional pro-association movement and promoted by some Europe-wide institutions², reached a certain consensus among its members, the European Mediterranean regions, on transport issues of common interest. The joint vision adopted

²Such as an the European Centre for Regional Development (CEDRE) or the CPMR (Conference of Peripheral Maritime Regions).

on high-speed railway lines – which at the time had just begun to be considered – as well as on the role of regional airports, which were envisaged to be configured as *third-level* aviation networks, is still interesting after nearly twenty-five years. This is the case despite changes that have occurred in Europe, such as the proliferation of low-cost airlines following the liberalisation of the aviation markets. Other conclusions of the studies carried out by CITRAME, such as the need to improve access to poorly connected inland areas, not only remain valid, but furthermore, the solutions envisaged to resolve them – notably better regional integration – are the basis of those proposed here. Today, inter-Mediterranean cooperation initiatives are articulated mainly within the CPMR, the Conference of Peripheral Maritime Regions.

The complementary issue of the international projection of the Mediterranean regions was also addressed twenty-five years ago. The Catalan Institute for the Development of Transport, which has unfortunately disappeared, published a book entitled *Catalunya en el context mundial del transport* (Catalonia in the Global Transport Context), premonitory of many trends that have taken place over the years, particularly in connection with the explosion of logistics (with the first proposals for the creation of logistics platforms in Catalonia) and the need to coordinate port policy. Despite these, and other equally or even more important, initiatives – such as those put forward by CETMO, the Centre for Transport Studies for the Western Mediterranean – in relation to the structuring of the European space through transport infrastructure³, the fact is that little progress has been achieved in the implementation of comprehensive proposals for the creation of transport infrastructure networks to better connect the Mediterranean regions. The centralising visions of the French and Spanish States, based on political and territorial considerations prevailed even though this often involved – especially in Spain – the construction of radial infrastructure without sufficient social and economic utility. During the nineties, reflections on transport infrastructure in the northwestern Mediterranean were placed within the discussions about the establishment of trans-European networks (TENs). As will be seen, the regional proposals were sidelined in the definition of TENs for the reasons already mentioned.

On the other hand, a more global approach, encompassing the whole Mediterranean basin, including the southern and eastern Mediterranean countries, was enshrined in the Barcelona Process, which aimed to create a free trade zone throughout the greater region. This process, encouraged by the European institutions, recognised the importance of improving the transport system in order to create the proposed free trade area, and thus help the development of the partner countries. In practice, however, the initiative was hindered by the lack of European funds for

3. As does the seminal work of Albert SERRATOSA, *La difícil vertebración de Europa: Tráfico y red viaria* (Difficulties in Structuring Europe: Traffic and the Road Network), Strasbourg, CEDRE, 1988.

infrastructure for the Mediterranean partner countries and excessive concerns about legal and administrative matters. Such concerns explain the position adopted by the European Commission, who wanted an improvement of the institutional setup of the transport system before dedicating resources to it. It was not until recently that specific actions have been taken regarding European support to transport infrastructure. This is largely due to the fact that CETMO, created in Barcelona in the mid-eighties, has kept the flame: it is virtually the only institution that has been directly and continuously involved in the study of relations between European and the Maghreb [northwestern Africa] countries and in making proposals for the development of the transport system in the area.

Therefore, we can say that a small number of experts – most of whom are directly or indirectly linked with the Catalan Institute for the Development of Transport – gave support for many years to the intellectual debate on Mediterranean transport infrastructure. This debate has recently been reactivated as a result of the work of the Ignasi Villalonga Institute of Economics and Enterprise and other initiatives such as Ferrmed, and has come to occupy a prominent place in civic, institutional - particularly through the chambers of commerce - and, finally, political concerns.

The *White Paper* is, in a sense, the culmination of a long process that has been undertaken at different levels by civil society. The document is the final push of this process, which aims at mobilising institutional support at the European, national, regional and local levels in order to bring about the necessary measures to provide the infrastructure required by the Euram. This requirement obeys to territorial and political objectives as well as social and economic profitability criteria. The *White Paper* is not actually asking for more infrastructure in the Euram, but it pleads for better decision-making regarding public investments in infrastructure in Spain and also in France. Over the last ten to fifteen years many realisations have been decided without taking into account, in an objective way, the social and economic utility they provide to individuals and companies, and this is something that must be changed.

1.3. *The current debate on infrastructure*

Despite the initiatives just mentioned, the significant and continuing presence of infrastructure issues in the media is relatively recent. The media coverage of the subject has been stimulated by its strong politicisation, due to often conflicting pressures: traffic congestion, but concern about environmental conditions; demand for more motorways, but requests for the abolition of tolls; cost containment, but Keynesian policies; etcetera. However, the debate has occurred at a regional level (where regions compete for more investment) or state level (with European states competing for resources that they themselves contribute to the EU), rather than at the inter-regional cooperation scale, which was advocated by CITRAME, and which is the most relevant level here. These

reflections aim to contribute to the debate from a different, more elaborated, point of view in order to produce reasonable proposals.

In any case, it is convenient to analyse the three aspects that seem to explain the current political thrust regarding infrastructure provision. First, there is a *clearer awareness of the need for infrastructure*, because the continued growth in the demand for services during the past twenty years – even with occasional small downturns, as occurs at present, due to the financial crisis – has not been accompanied by a commensurate increase in supply. This has led to the saturation of some infrastructures, and sometimes, to extreme situations both in the transport sector and in water and energy supply. At the same time, the public sector has built new infrastructure impossible to justify by the foreseeable demand levels. A second aspect is that this investment policy has inevitably generated *comparative grievances* between different regions and local areas. Such grievances have been skilfully used in the media by some pressure groups (the debate over the elimination of tolls or over the fiscal unbalances among regions are clear examples of this factor). Finally, some *special interests* – often well-intentioned, but almost always poorly informed – have managed to inflame the debate still further. On the one hand, there are movements calling themselves environmentalists or supporting some other interests. These movements have used the construction of any new infrastructure as an argument to attract the attention of the media and a society that is increasingly aware of landscape degradation due to the accelerated urbanisation process that the Mediterranean Basin in particular has suffered in recent years. On the other hand, there are the large Spanish companies in the infrastructure construction and management sector. Over the last twenty years, these companies have become very powerful multinationals, and press decision-makers to maintain the policy of major public investments in Spain, even though these investments may often represent a misuse of public resources, as we shall see later.

Certainly, all three aspects are important, and must frame the discussion that we present here from a global and independent perspective. This global perspective is, however, directed towards a very specific region, the Mediterranean Arch Euroregion, integrating territories with strong cultural, economic and social ties that clearly have common interests in having the infrastructure required for jointly seeking economic progress. Integration – that is, the establishment of supra-regional areas of cooperation – is particularly necessary in the economic sphere. In the Euram, as is the case in other geographical areas of Europe, only through integration is it possible to attain the economies of scale needed to adequately compete in an increasingly globalised world. In Europe, both in the Baltic and in the Danube, which are areas with strong historical ties supported by the ease of communication, advanced interregional initiatives for social and economic integration already exist, driven by the social, economic and institutional agents of the various regions and supported by the European Commission.

1.4. Which networks are best for the Euram?

If we address the issue of infrastructure at the scale of the Euram, it is because we are convinced that there are shared interests at this level. We shall demonstrate, however, that these interests lead to common requirements for services, and also that adopting a global approach on infrastructure provision improves the resolution of these requirements.

What characterises services that need infrastructure to be delivered is that they operate within a network. And the more integrated these services become, the greater the need for a global vision of the network to understand and plan them. If the water sector already shows an interest in a global vision – particularly in the Mediterranean Basin, where rainwater collection is very irregular – there is even more interest in the energy sector, and in particular in the area of electricity and gas, heavily dependent on network effects. Transport is, obviously, the sector where these effects are most critical. Telecommunications is the prototype for networking, but in this case the infrastructure is more independent of regional considerations.

To make proposals on infrastructure, one must therefore consider its role within service networks, and furthermore, who pays for it and who benefits from it. Public services in developed countries have become highly complex systems. It is not easy to explain how they work, and therefore there is a tendency to simplify, particularly by politicians and by the media. Both of them often send messages to the public that are very simple, essentially slogans, which are easy to understand but often carry a demagogic weight. This simplicity is difficult to dismantle when the time comes to take specific actions that obviously have many effects, some of which are not good for everyone.

As regards transport – which, for most people, has a great immediacy and represents a significant portion of their allowance of money and time (on average, between ten and fifteen percent of their income, and one hour a day) – it is unsurprising that there are very entrenched positions, often quite irrational and inconsistent; it is equally unsurprising that people easily move from individual experience to generalisations. A typical case is many people's belief that transport infrastructure occupies an excessive amount of land. They have obviously come to this conclusion based on their perception of the landscape, which is distorted because we almost always observe the landscape while we are using infrastructure, often a road, which occupies, of course, a significant part of our field of vision. The analysis from land survey data or based simply on what we see from an aeroplane or from a satellite image leads to very different conclusions, but it is not easy to convince the citizenry of this reality.

The publication of the *White Paper on Infrastructure in the Euram* is particularly timely

because, taking advantage of the fact that the topic is on the table, it shows the complexity of the subject in hand and the importance of avoiding simple and preconceived ideas. The *White Paper* is therefore both a kind of audit, accompanied by local analyses, of the concerns and desires of civil society on public services in each local area, and a synthesis that attempts to make these elements converge into global proposals. The results have emerged from local meetings and, given the complexity of the issues at stake, it is logical that the concrete proposals for improvement of infrastructure are focused in the area where the meetings took place and its surroundings whilst the proposals regarding the broader territory are only described in a generic way. But there can be no doubt that these proposals reflect an understanding of the challenges that civil society must face, and of the deficiencies in the current system.

As the synthesis and the conclusions of the *White Paper* logically reveal their local origin, it seemed appropriate to complement them with some reflections that aim to put forward a comprehensive vision, more global and, ultimately, more scientific. While the *White Paper* has a *bottom-up* approach for each region and every infrastructure project, here the reflection is oriented, strategically, in the opposite direction: *top-down*, from the world and Europe to the Euram. Thus, to reunite both approaches, we considered it appropriate to place the conclusions of the *White Paper* in boxes placed throughout the text, in those parts of it which refer to the issue.

Finally, it should be noted that the considerations made both in the *White Paper on the Euram* and here are set in the context of regional and transport policy, and they are dealt with, therefore, from a broad perspective, which is essential to have an influence on the perception that national and European authorities have of the Euram.

1.5. The challenge of integrating a complex system

As we mentioned before, modern transport infrastructure can only be understood if we realise that it makes up increasingly complex networks. It is via these networks that users move, using their own vehicles, or by means of the services offered by transport operators. Although these networks are often multimodal – that is, they incorporate various modes of transport – their analysis is usually carried out separately for each mode. We must note, however, that it is the sub-network of roads that provides a universal service, since, in reality, all the other transport modes offer multimodal-type services. Navigation, aviation and railway transportation can only reach most departure and destination points using roads.

Land transport sub-networks (the road network and, to a lesser extent, railways) tend to homogeneously cover the territory where they are established. They link “nodes”, or points where

there is a concentration of demand (in the Euram, these are the cities and major centres of economic activity) through “arcs” or connecting infrastructure (motorways and railways). Some of these nodes are airports, constituting the air transport sub-network and other are ports, which are strictly determined locations, because they are constrained by geography, constituting the navigation sub-network.

The demand for mobility is point-to-point (node-to-node), and is met more or less effectively, depending on the performance of the arcs that join them work. Indeed, it is not so much the distance that counts, but the ability of the link to provide the best service (in terms of time, cost, reliability, comfort, safety, etc). The quality of this service depends, essentially, on the technology of the infrastructure and its operation.

Each modal sub-network has particular characteristics and certain comparative advantages depending on the type of service. Some of these advantages are inherent and obvious, such as those of aviation for long-distance trips. But often, the preponderance of a mode of transport depends on how the service offered integrates with the service provided by other sub-networks constituting highly efficient multi-modal chains. For example, in many cases, short sea shipping has the ability to link port nodes much more efficiently than land-based alternatives. This is the case of maritime services between the Euram and some Italian ports, which have much shorter routes than the coastal alternative by road. But the ships must sail sufficiently full to justify commercial operation; and for this, in addition to other things such as a high frequency of service and competitive prices, the access to these ports from their hinterland, and the parking and boarding facilities, must be good enough.

It is important to understand this relationship between sub-networks, and the fact that there are many services which work as a chain, in order to get a coherent vision of the transport system and to make it work effectively, which is the main challenge addressed here. Effectiveness is, however, linked to objectives that must be clearly defined. The first problem in this regard is who defines the objectives for a region that has no government, but is a geographical and social reality and the product of historical and economic processes with a great tradition.⁴ At present, it is difficult even to think of a structured system of coordination, because it would require three states to reach agreement on an international course of action that, at least two of them, may possibly take as an attack on their sovereignty.

On the other hand, even with shared objectives, the current model implies that it is each state who applies both operational and infrastructure-related measures in the part of the Euram area that

4. See Joan B. CASAS and Patricia CRESPO, *L'Euram: centre o perifèria? Una perspectiva econòmica* (The Euram: Centre or Periphery? An Economic Perspective), Valencia, Ignasi Villalonga Institute, 2009.

it controls. This situation, which has little prospects for change, at least in the short term, reduces the potential of a transport system that should be designed, built and managed with the aim of serving the whole area. There is a low possibility that these states may establish a supranational ad hoc body, or renounce their powers and hand them over to the regions involved so they can create a supra-regional institution (a Euram-wide agency with executive capacity). As a result, it appears that the only solution in order to achieve the desired infrastructure integration is to improve interaction within civil society. Civil associations, based for instance in the Chambers of Commerce, could thus take a certain role in coordinating the various disparate interests and in developing innovative ideas. The public sector - each public body with executive power - would collect the proposals emerging from experts within civil society, who do not share the administrative constraints of public authorities, would analyse their acceptability and viability and eventually channel them towards those who can bring them about.

2. AN ANALYSIS OF THE TRANSPORT SYSTEM IN THE EURAM

2.1. *In pursuit of common objectives*

It is obvious that the current situation frames any reflection on transport network infrastructure. But the existing transport system, and especially its infrastructure, is the result of a series of decisions made over time. Often, these decisions were influenced by the political and administrative environment – we need only look at the effect of boundaries on the density of linear infrastructure – and, of course, by the moment these decisions were taken. A global and long-term vision has almost always been absent or short-lived in these affairs. The inconsistencies burdening the transportation system as a consequence are easy to see, especially if we adopt a perspective like the Euram, that leaves aside meaningless administrative barriers.

The present exercise, complementary to the *White Paper on Infrastructure in the Euram*, is an attempt to show, starting from the current transportation system – which we have said is sub-optimal – some adaptations to make it more globally coherent and better structured. After identifying the shortcomings of the present situation, we will make proposals both to adapt the existing infrastructure and to construct new ones that will permit the completion of a multimodal network supporting a transport system capable of meeting the future needs of the Euroregion.

As mentioned earlier, to make acceptable proposals, we must first reach an agreement on the goals that the Euram's transport system must attain in the long term, that is, we must arrive at a certain consensus on what its role should be. Only from a clear understanding of the expectations of the system can we make proposals for developing these networks and, afterwards, for defining concrete lines of action.

However, the deployment of these proposals, especially those involving new infrastructure, is constrained by a variety of technical, environmental, economic and social factors which we must carefully consider, to avoid potential blockages. The analysis of these factors should indicate the best tactics to bring about these proposals, which must be specified in a programme of concrete actions in relation to the planned projects. The programme foresees the implementation of these actions over time because, logically, their accumulation in a short period would cause management and financial difficulties as, in practice, it is impossible to mobilise public resources quickly due to rigid assignment patterns based on annual budgets.

The task of politicians is to validate both the objectives and the strategy, which, ideally, should be agreed among all the parties (to achieve a degree of durability), and take the tactical decisions, adapted to changing circumstances, based on clear criteria abiding to the approved strategic

framework.

The different political and administrative structures of each of the Euram regions makes consensus difficult, but in any case, in order to define joint objectives and strategies, the various parties must place themselves in the right analytical framework. On the one hand, they have to understand the spatial and environmental context, which is very difficult to change, particularly in relation to protected areas; and on the other hand, they must be fully aware that transport demand is very dynamic and requires investment programmes that are sufficiently flexible so they can be adapted without much expense to any new conditions that may arise.

In this context, it seems easier to propose global and coherent goals and strategies emanating from the professional and academic world, rather than from the political sphere. These reflections are intended to help in this task. As it is essential to acknowledge reality in order to give ideas that can be carried out, let us first look at what pressures can be expected from transport demand, so we are able afterwards to properly assess whether the territories of the Euram have the capacity to respond appropriately to the infrastructure needed to channel that demand.

2.2. The Euram's surroundings: Location and potential. A positional strategy in the world

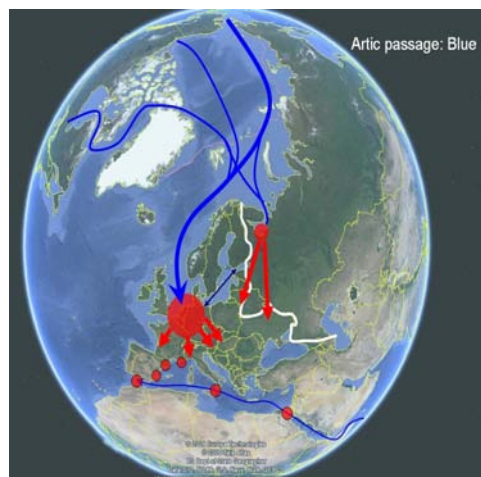
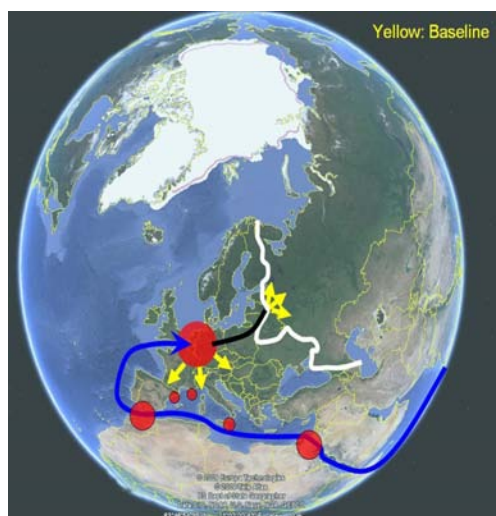
Economic growth is closely correlated with transport. The idea of uncoupling them, as the first *White Paper on European Transport Policy* wished, has proved unworkable, at least as regards medium and long-distance intercity transit. As long as the process of globalisation proceeds, growing international trade will entail more long-distance transport. The establishment of the Single European Market, which is not even close to consolidation, will generate new flows of manufactured and semi-manufactured goods across the continent. On the other hand, we observe that specialisation at the world scale is simply in the first phase. The present very unbalanced traffic flows between continents will gradually increase and become more balanced, as indicators of welfare in European and emerging countries move closer to each other. Transport will eventually be more efficient, with fewer return trips with empty ships or containers. In fact, the political objective of the White Book should have been the improvement of transport and not its reduction (the proposed “decoupling”). In any case, we can affirm that, in view of developments in recent years and the desired and predictable extension of trade liberalisation, flows of freight will continue to grow, at least, at the rate of the economy. A similar conclusion can be reached, as will be seen later, with regard to intercity passenger flows, whether for tourism, business or for social reasons. This is

not the case for urban transport, which has quite different problems and is treated only marginally in these reflections.

The geographical location of the Euram, in the northwestern corner of the Mediterranean and in the northeast of the Iberian Peninsula, can be seen as peripheral in relation both to Europe and to the Iberian Peninsula; but, if we adopt a global vision, we can talk about a certain centrality. The central position of the Euram, although based on a long history of interaction (as regards the Mediterranean), is due to a very recent phenomenon, linked to globalisation, which is slowly converting the Euroregion into a great European logistics gateway for freight from the East in competition with the major ports in the North Sea.

A synthetic analysis of the position of the Euram in relation to the great flows of world trade and, secondly, in relation to peninsular flows, will offer the basis for a strategic reflection. The massive flows of manufactured goods caused by globalisation and originating in China, Japan and other Far East countries as a result of their industrial specialisation, will continue to pass through the Suez Canal and the Mediterranean. There may be sporadic episodes (piracy, war) causing detours, but the alternatives, even for the latest generation of large containerships, are not really viable. The East-West traffic flows with destination in Europe and beyond will cross the Mediterranean, and will have the option to stop over in the Euram, or pass it by.

Three alternative scenarios for freight transport by sea



Source: Mcrit by the Baltic Scenario Forum, 2009.

Interestingly, the strongest threat to the forecast we make – that is, that the Mediterranean will maintain a central place in traffic flows between East and West – may come from some of the predictions about climate change really coming true. But not from the forecast direct effects of the phenomenon, such as possible structural changes in agricultural production or large movements of population. The greatest impact on crossing the Mediterranean would be if the North Passage – an opening that links the Far East to northern Europe via the Arctic Ocean – becomes operational for increasingly long seasons. For flows between much of Europe and Japan, Korea and part of China, the Suez route would only be competitive in winter!

In any case, this situation is unimaginable both in the short and medium term, and therefore, from the perspective for planning that we have before us, the possibility to attract intercontinental traffic to the Euram depends essentially on the capacity of its ports and its logistic system to respond to three dimensions: traffic volumes, fees (for port and transport services) and service quality (reliability, speed, safety, etc). At present these dimensions allow the Euram to adequately compete with other areas (such as the Port of Marseille) which have a more central position in Europe, but are weaker essentially for three reasons: a) administrative, labour, etc. rigidities - traditional in port systems, which the Euram has reduced substantially in recent years, although they are still heavier than in the Benelux countries, b) the tendency for owners of increasingly large containerships to reduce the number of stop-overs, especially when they mean going off the direct route from Gibraltar to the Suez Canal, and c) the inability of these areas to meet the infrastructural requirements of a major logistic gateway.

These small advantages have allowed the Euram ports, particularly those of Valencia and Barcelona, to win positions in the Mediterranean. This fact also shows that in the struggle to get and maintain a strong position in the rapidly changing map of international trade (for example, an substantial growth in European exports towards increasingly rich Eastern countries can be foreseen), slowing down may mean losing the competitiveness race. Presently, in order to perform well in the world's arena, it is essential that the Euram shows a united front, powerful enough to compete with other areas (some of which, like those in northern Morocco, progressing rapidly). To achieve the required image of unity, coordination between ports, still weak in the Euroregion, is fundamental.

It is also important to understand the role the Euram plays in Iberia. The weight of the Mediterranean seafront for trade between the Peninsula and the East is unquestionable. However, Algeciras port could represent an important alternative to the Euram for this trade, but only if it could take advantage of its role as a transoceanic hub in order to create a major logistic pole for freight distribution across the Peninsula. It is not something easy to do, because local consumption

is small and there is little experience in logistics in the area. However, as competition by Tanger-Med is changing its comfortable position as the sole major port in the Strait of Gibraltar, it cannot be guaranteed that Algeciras will not decide to become a logistic gateway for the Peninsula.

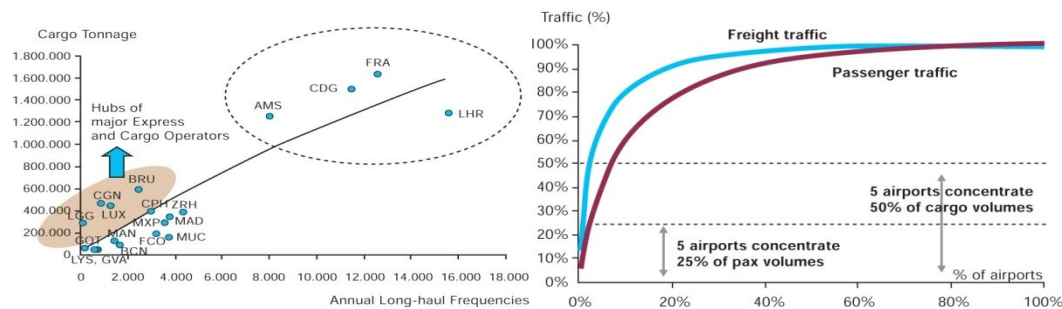
Even though other competing nodes, such as Algeciras/Tanger-Med, have a better geographical location on the Suez-Gibraltar route, the ports of Tarragona–Barcelona and Valencia–Sagunt must become logistic gateways for Southern Europe, extending their hinterlands. Barcelona and Tarragona must have a co-ordinated management.

As for the Peninsula's Atlantic traffic, it could be argued that the Euram, and in particular the Port of Valencia, has always maintained a very strong share, despite its unsuitable location. Geographical logic favours the Portuguese ports, but for now, their hinterland includes practically no Spanish territory. Leaving aside the issue of the border (especially the linguistic one), this can be explained by the lack, in Portugal, of a coherent policy for ports, which has caused them to lose a lot of competitiveness. The proposal to make Sines, in the Alentejo region, a major port for North–South traffic (that is, between Africa and northern Europe), combining this with trans-Atlantic traffic, is unlikely to succeed. This is because, despite its good natural conditions, Sines does not have a powerful hinterland, and this situation is not easy to correct, because the port suffers from poor inland connections. However, the necessary integration between the ports of Lisbon – which cannot grow any more on the River Tagus estuary – and Setubal could create a powerful Atlantic gateway for the whole Peninsula. The options of Leixões (Porto) and some other ports in the regions of northeast and northern Spain are even more limited, as they are eccentric and have only a modest chance to collect much more flows than those of their immediate hinterland... Their competitive situation with regard to attracting traffic to or from the American Continent is, therefore, similar to that of the Euram ports.

Until now we have talked about shipping and intercontinental trade. We must also take air freight into account, because of its economic importance. Although it represents a small percentage of imports in terms of tonnage, the unit value of air cargo is very high. This means the sector has a very important place in the logistic organisation of international trade. Thanks to its peripheral location in relation to the rest of the European Union, air traffic on the Peninsula may continue to grow strongly, in parallel with the consolidation of the Single Market. Partly because of this situation, Spain has the potential to become a bridgehead for some of the intercontinental air traffic in Europe, particularly for traffic flows to South America and some African regions. What is important here is the quality of the logistic services and pricing levels. Madrid, with its central position, its own market and its large airport, is the region with the greatest potential to become the

great logistics centre in the Peninsula for air freight. The ambitious plans for creating logistic infrastructure within the Region of Madrid are committed to enhance this role, which, in a sense, is complementary to the role Barcelona airport could have in air traffic with both the Middle and Far East and indeed, the role that the Euram ports may have in shipping.

Concentration of air freight in a few European airports



Source: ACI Traffic Data, OAG July 2002 and ALG processing

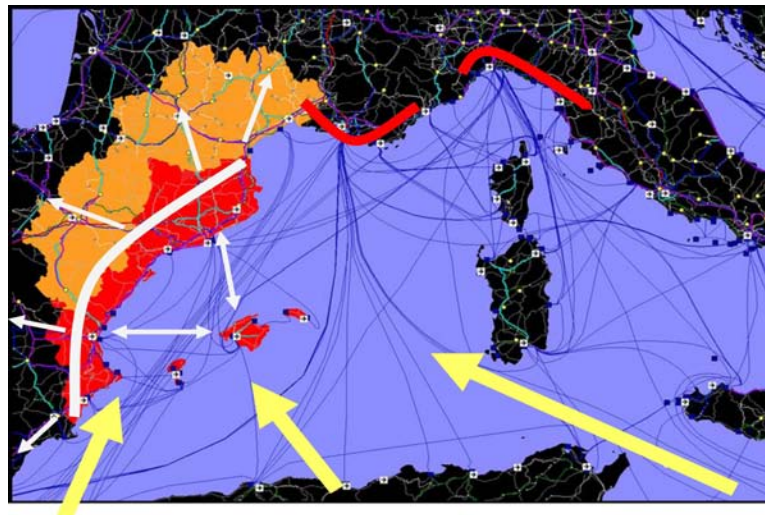
Source: ACI Traffic Data and ALG processing

Source: ACI Traffic Data, OAG 2002 and ALG. From the ARC Report on Airport Regions Conference, 2003.

Thus, with a long-term vision, we can imagine that, based on its seafront of ports, the Euram will maintain its position as the great logistics gateway of the Iberian Peninsula for traffic with the East. If it finally captured a lot of additional container traffic – a modest percentage of the total crossing the Mediterranean would be enough – the Euram could benefit from economies of scale and begin a dynamic process of improving prices and service quality that would make it increasingly competitive with the traditional logistic gateways in the North Sea. It could thus gain access to a diffuse European hinterland including areas as far away as Paris, southern Germany, and Switzerland... The common interest in securing a strong position in the East-West routes should encourage coordination with the other two great hubs on the Peninsula, Madrid and Lisbon, in order to develop a very powerful transversal axis. The Euram should also cooperate with Zaragoza, Toulouse and Montpellier, to ensure their involvement in the strategy as secondary distribution nodes. Some competition with Algeciras and with the ports in the north of Spain would be very healthy. In the short term, the most fearful competition in the fight for the European hinterland, will certainly come from the logistic hubs of Belgium and Holland. They now control the import market and it is unlikely that they accept the loss of part of their power without a struggle. In the longer term, the Port of Marseille will wake up, so that, unless its region (Provence-Alpes-Côte d'Azur) wished to join the Euram, it could represent a strong competitor for the traffic towards the centre of Europe which the Euram wants to capture.

Logistics must develop in the Euram as an emerging sector that generates added value associated with the activities of distribution, assembly and finishing of goods, serving the needs of industry and port operators. The difficulty in assigning more land for logistic use means that we must establish networked management structures linking the various logistic platforms. If the Euram platforms (including *Plaza*, in Zaragoza) work efficiently within a network, they will make the Mediterranean Arch Euroregion internationally competitive. It is advisable to consolidate public-private partnership approaches to build and manage logistic centres.

This map graphically shows the strategic approach presented above:



Source: M. Turró, 2010.

2.3. The demand for transportation inside the Euroregion: Freight

In the former comments about the role of Euram in the global context, the whole Euroregion has been presented as if it were a single node. But for the Euram to operate as a major node in the intercontinental network, it is essential that it works well at its own regional level, ensuring that the internal network forming this “single” node is sufficiently efficient and effective. Only then will the Euram brand gain acceptance by the major transport and logistics operators in the world.

For the Euram’s transport system to work properly at its regional scale, it must take advantage of the complementary relationships between its various components. It must, at the same time, guarantee competition between them, particularly in relation with the services they provide. As they are not natural monopolies, services need competition to ensure efficiency. We will analyse in detail

complementarities and competition affecting transport infrastructure; but to correctly assess them for the Euram, we must do so in the context of wider economic relationships.

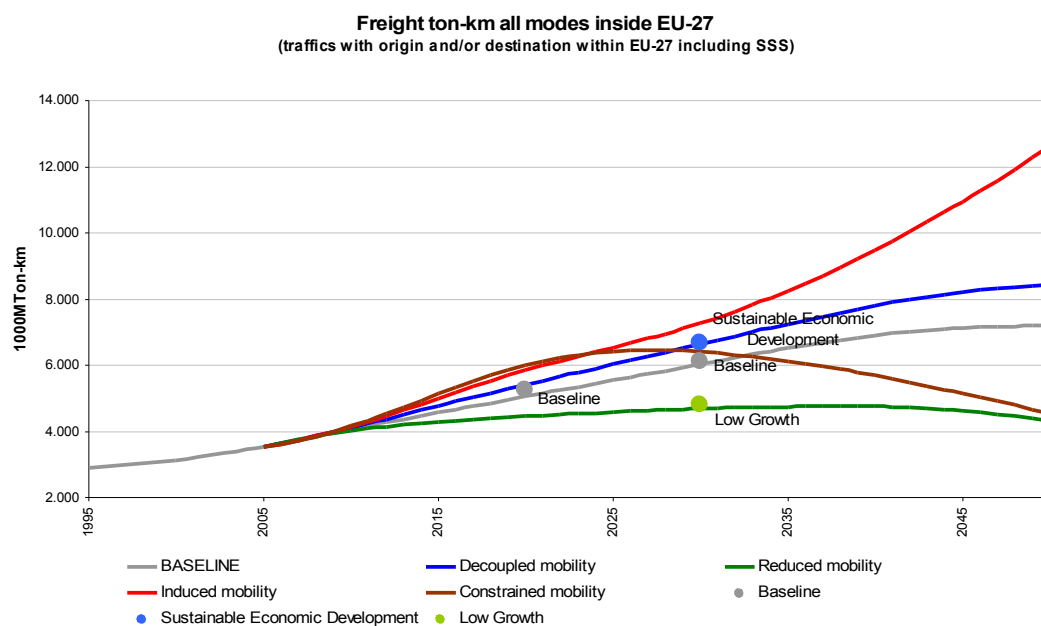
If we examine the trade flows and the locations of clusters in the Euram (see the book by Joan B. Casas and Patrícia Crespo), we can see that the economic integration of the Euroregion is very strong, with industrial sectors often having very close links. It is true, however, that many of them, especially low-technology ones, are shrinking. Globally, industrial dynamics are complex and difficult to predict. The strengthening of commercial ties inside the Euram may help to achieve economies of scale in various sectors, so cluster effects will not be restricted to specific local areas but rather expand to larger areas of the Euroregion. This requires that the advantages of proximity, which are a key factor in the configuration of a cluster, can be extended to these greater areas thanks to a very good accessibility. This is why the Euram needs strong internal transport networks allowing complementary businesses to work effectively and become more competitive at the global level. Their competitiveness will be strengthened by improved import and export processes, following the concentration of international traffic flows in some key nodes. This approach is nothing more than recognition of the importance of networking, especially when there are obvious complementary relationships and when it is important to gain a presence in higher-level networks.

Proper networking can only occur when the connections between nodes are good enough. This can be defined essentially by three key parameters of transport service: cost, time and reliability. There are other factors that may become very important, such as safety, and others that can be expected to have a growing influence on the price of transportation, such as externalities (through the effects that payment policies for environmental impact may have). In any case, if we could get closer to a situation of real competition in transport services, infrastructure would be the decisive element to reach the level of transport quality that would allow working in clusters within the Euram. The textile sector could be an example to set up the discussion. There have always been good relations between the traditional Sabadell–Terrassa cluster in Catalonia and Alcoy (País Valencià). However, a better integration between textile manufacturers and technicians of both regions, in order to increase specialisation, and more fluid relationships with machinery manufacturers and businessmen of the dress-making and clothing distribution sectors (very powerful in various parts of the Euram), would certainly strengthen their joint position in the high-quality market segment, where developing countries have more difficulties to compete. Presently some specific companies in the Euram hold a very good position in the world's clothing market, but the whole textile sector could certainly play a more important role in the global market if it had enough weight to import and export at low cost, i.e. in large quantities, and if it could be based on an efficient logistics system and on economies of scale originating from better integration inside the Euram. Many other sectors offer similar potential.

In fact, not all industrial and commercial sectors can benefit from a *regionalisation* of the transport system like the one proposed for the Euram. Particularly those with a smaller market and less affected by globalisation, or sectors for which the weight of transport is fundamental (cement, mining), will be more interested in the gateway aspect than in the internal connectivity.

This leads us to another discussion frame: the type of transport required to serve the needs of industry and commerce. In the Euram, economic activity is basically associated with small and medium-sized enterprises (SMEs). According to the Spanish National Institute of Statistics, out of approximately 1 million businesses on the 2009 census, there were only 241 who had more than 1,000 employees (25 companies had more than 5,000 workers, 17 of these in Catalonia) and 94% of firms had fewer than 10 employees. SMEs do not often move substantial amounts of freight, but in the Euram even large companies are in sectors that do not move large volumes from specific points. Only the three companies in the automotive sector, and the four businesses in the retail sector (department stores, hypermarkets, etc.) generate a lot of traffic. They are interested in both import/export flows and movements within the Euram, as they depend on many suppliers located in the Euroregion. However, the demand for transport of the few major companies is very particular. Overall, Euram companies do not produce high-concentration freight flows. This is an important background consideration for any discussion on the type of transport and logistics service they require.

Forecast for freight traffic in the EU under four different scenarios of economic development



Source: Merit for the European Commission, Transvisions, 2008.

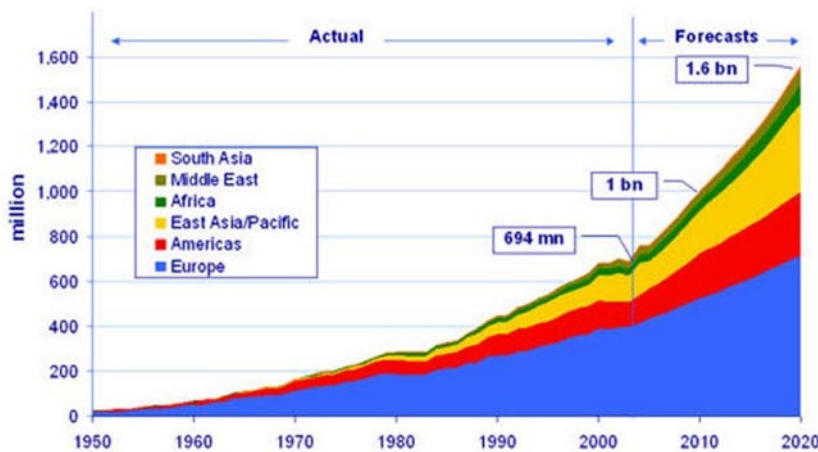
2.4. The demand for transport in the Euroregion: Travellers

The regional integration of the Euram cannot be imagined as depending exclusively on freight transport. Passenger transport is crucial, not only to support the economic activity of the Euram, but also to reinforce its strong social and cultural bonds. To analyse personal mobility in the Euroregion it is essential to distinguish between everyday trips, usually short and occasionally medium-distance, and sporadic intercity travel, for work or leisure purposes (tourism, social, etc).

Indeed, even though we can not fully separate long-distance transport of passengers and freight, because they often share the same means, they must be analysed separately if we want to understand how each segment works. Urban or peri-urban journeys also share infrastructure with long-distance trips because they usually have origin and destination in urban areas, but again they require a separate analysis because travellers' behaviour varies greatly depending on travel length. Nonetheless, as these considerations are focusing at the Euram level, we will only cover the issue of urban transport, which is quite complex and varies greatly between cities, when discussing their interfaces with intercity flows.

The traditional method of analysis of demand for interurban mobility concentrates on the purpose of the trip. Within the framework of the Euram, we find that journeys have indeed very different features depending on what motivates them. Work-related trips are mainly either for administrative tasks to the state capitals (Paris, Madrid) or for business (often inside the Euram, but also abroad, as the Euroregion's economy is very export-oriented). As regards travel for leisure, tourist flows are the heaviest, with an increasing component due to holiday and social trips of immigrants. Variations in tourist flows due mainly to low-cost aviation and the opening up of Eastern markets have led to a very obvious reduction in European tourism travelling by car from nearby countries. More complex methods, based on air travel, are becoming the new paradigm in tourism. In this sense, the experts predict a new wave of tourists in the Mediterranean coming from Asia, especially from China and from other emerging countries. Following their Japanese predecessors, these new tourists are more oriented towards cultural and culture-related proposals than to the typical offer of sun, sand and sea. This will have repercussions on the demand for mobility that are difficult to predict at this time.

Forecast for the growth of world tourism until 2020



Source: UNWTO, 2006.

How can we face the challenges of a growing intercity mobility which is a crucial ingredient for wealth generation in the Euram? First, we must see if there is interest in addressing the issue jointly for the Euram (i.e. for a single big node representing the whole Euroregion) or whether it is preferable to try to find solutions for the set of smaller nodes directly linked to the various regions included in the Euram. Without going into a detailed analysis, we can show that there are many advantages in considering the Euram's intercity passenger transport system from a joint perspective, in terms of both the effectiveness and the efficiency of the new investments to be made. The demonstration derives from, on the one hand, Euram's linear structure (the coastal corridor), which allows the concentration of different transport flows and, consequently, the possibility of establishing services designed for the whole corridor, which can be more efficient. On the other hand, the advantages of a joint perspective derive from the limited number of land and air links that the Euram has with the exterior. This situation, due to its unusual topography, makes a multimodal system, built around the limited number of nodes linking the region with the outside world, a beneficial solution for all the territories involved.

2.5. The Euram network in the context of TEN-T

The Trans-European Transport Networks (TEN-T) aim to establish a transport infrastructure that will facilitate the development of the Single Market inside the European Union. They are complemented by corridors connected to neighbouring countries, in the context of what is called the Neighbourhood Policy. The TEN-T, which gained official status in 1993 as part of the Maastricht

Treaty, identify certain routes of common interest within the road networks, the high-speed and conventional railways, and the waterways. The TEN-T Guidelines also establish criteria for what kind of interventions, in airports and in ports, can be considered of European interest. In a revision made in 2001, intermodal nodes were added; in 2004, the original number of fourteen priority projects was extended to a total of thirty projects. Later, in 2006, the Executive Agency for the TEN-T was established, with a mandate until 2015, to support the creation of these networks.

The actions proposed in TEN-T policy reflect as much the will to launch a true European project, as all the shortcomings of the EU as a result of the reluctance of member states to transfer to the Union any real power of decision, in a federal sense. The discussion on this issue is very interesting,⁵ but here we limit ourselves to analyse how the Euram has been treated in the development of this policy. To understand this treatment, one must know that, in Brussels, it is the member states (the Council) who take the final decisions, based on proposals from the European Commission. In some cases, as with the TENs, the European Parliament is involved in a process of co-decision, which in practice, in technical matters like this, usually only slows down the approval process but does not make many positive contributions. The weight of the member states is clearly reflected in the TEN-T, because the “European” networks have finally become a patchwork of each state’s plans for the various modes of transport. We can only recognise their main objective - European integration - in the fact that the agreed routes show continuity across the borders.

As for the Euram, the TEN-T shows a great disregard for the obvious integration between the regions of the Mediterranean Arch. If the TEN-T were not simply a transposition of the plans of the French and Spanish States, which have never shown any real interest in developing the Euroregion, we could imagine that there is a European desire to avoid supporting transport infrastructure in the Euram. If we look at the trans-European road map, we can only see two non-radial routes: the Mediterranean Corridor (marked as existing, presumably because there are motorways with tolls) and the River Llobregat Axis. The first one was inevitable, since the AP-7 is the most powerful motorway axis on the Peninsula. And the inclusion of the Llobregat Axis was only achieved with very strong pressure from the *Generalitat de Catalunya* (Catalan Government). Such a bias does not appear anywhere else with comparable economic power. In Portugal, for instance, which has less economic weight than the Euram, we can observe a uniform and dense mesh of TEN-T infrastructure.

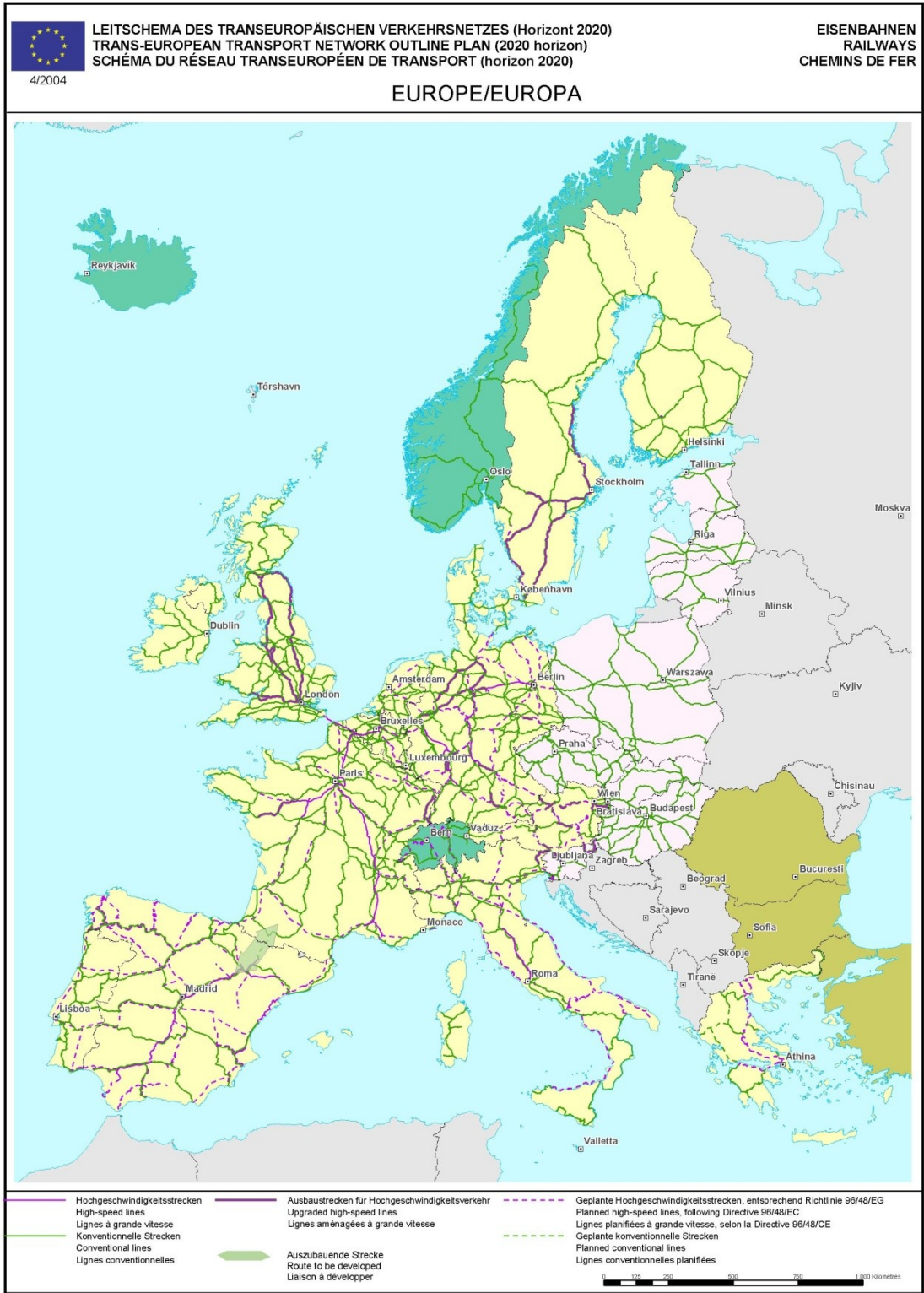
5. For a full view of the topic, see Mateu TURRÓ, *Going trans-European. Planning and Financing Transport Networks for Europe*, Pergamon, 1999.

Map of Trans-European Transport Networks (TEN-T). Forecast for the road network in 2020



Source: European Commission, 2004.

Map of Trans-European Transport Networks (TEN-T). Forecast for the rail network in 2020



Source: European Commission, 2004.

The situation of neglect is even more evident in the railways, even though the TEN-T rail map dates from 1996 and therefore does not contain the more recent plans of the Spanish government. As is well known, these plans simply are a result of the desire to bring all provincial capitals nearer to the capital. The Mediterranean Corridor appears only as a “planned” line to be adapted for higher speed (up to 200 km/h), but not as a real high-speed line.

With regard to ports and airports their inclusion in the TEN-T depends on certain - more or less logical - objective criteria. This means that the selection does not show the same level of politicisation observed in linear infrastructure. As the expectations to attract European resources to transport nodes were modest, discussions between the representatives of member states centred on the imbalances that the inclusion in the TEN-T of some terminals and not others might introduce in the competition *status quo*. In the end, the criteria adopted are so lax that almost any project may be considered trans-European, so that the TEN-T label has very little real effect on transport terminals.

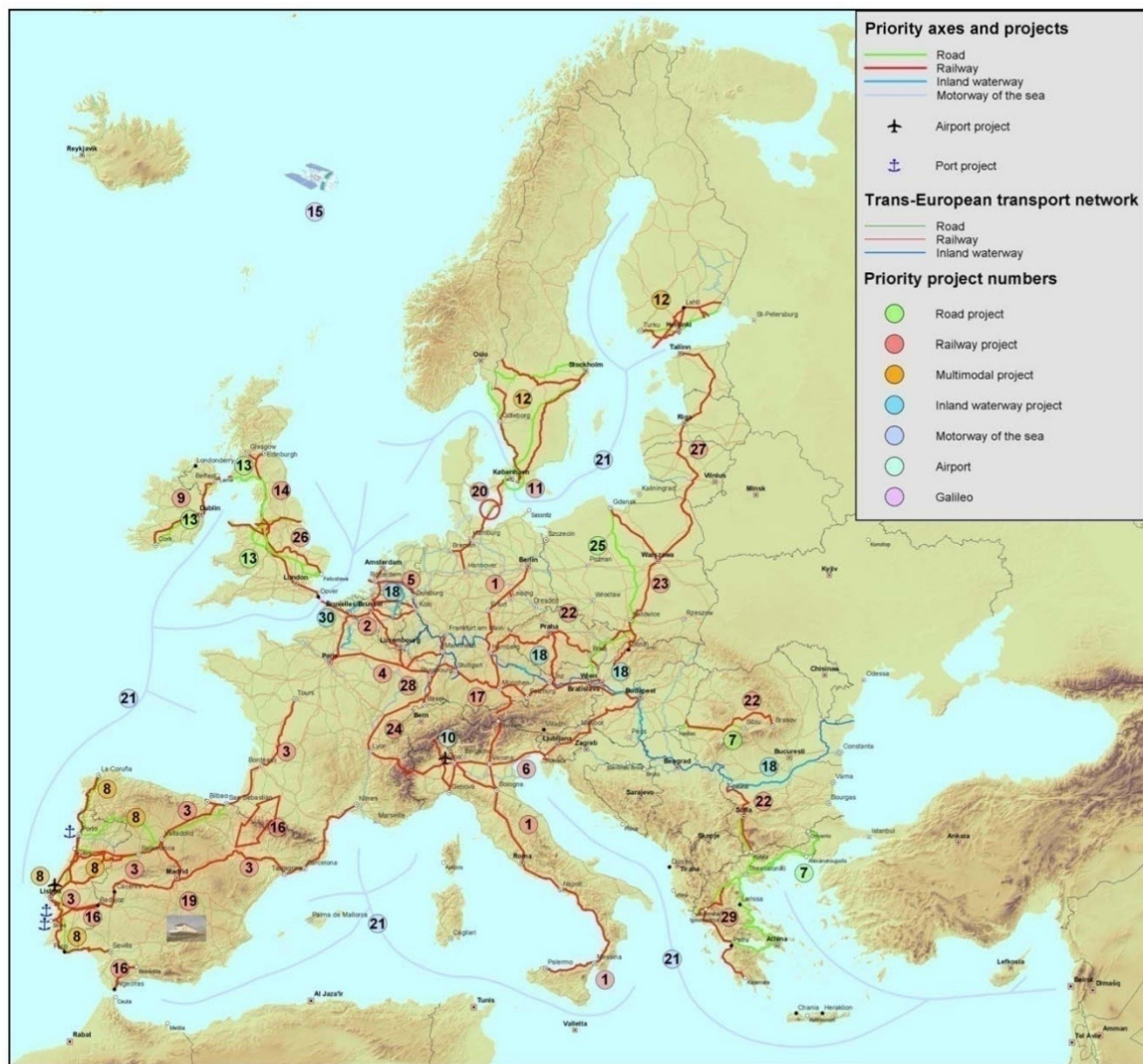
What is more interesting is to see which are the priority projects and their relationship with the Euram. Of the fourteen initial projects, there is one – the Portugal–Spain–rest of Europe multi-modal axis – that leaves aside Madrid (relatively speaking, because, by passing through Valladolid - a city less than 200 km to the north of Madrid - it also serves this city). This project is primarily of Portuguese interest, but somewhat competitive with the main Euram axis. The other project includes two high-speed lines connecting Madrid with France on either side of the Pyrenees. The reason why one goes through Barcelona is its inevitability. The same is true of its extension to Perpinyà, making Barcelona-Perpinyà the only part of the Mediterranean Corridor classified as a European priority. On the French side, it goes without saying that this rail axis is not a priority in Paris, which does not foresee the construction of the Perpinyà-Montpellier section until 2020.

Where the direction endorsed by the Spanish government is easier to see is in one of two projects that have been included in the most recent additions to the TEN-T priorities. One is the so-called *Sines / Algeciras–Madrid–Paris Rail Freight Axis*. In addition to the desire to attract traffic to Madrid both from Portugal (which aims at converting Sines into a major hub port) and from the ports of the Strait of Gibraltar, it proposes a central passage through the Pyrenees that involves a tunnel some fifty kilometres long, but also a huge investment to create proper access links on both the Spanish and French sides. This despite the fact that the rail traffic that can be expected to cross the Pyrenees would be easily channelled by the passages on either side. The construction of the new

high-speed lines and the tunnel on the transborder Figueres–Perpinyà line will leave a lot of spare capacity. Rail freight does not need shorter distances or high speed, but rather, reliability and low costs.

The only real advantage of the central rail corridor in the Pyrenees is that it reduces the distance between Madrid / Zaragoza and Paris, but this is not sufficient to make rail competitive for the envisaged flows. There is therefore no explanation for giving it priority other than marginalising the Euram.

Map of the European Commission's thirty priority transport infrastructure projects and axes



Source: European Community, 2004.

The last priority project directly affecting the Peninsula is to improve the inter-operability of the Iberian railways, notably preparing the network for the gauge change needed to make it compatible with the European rail system. This is an interesting project for the Euram and includes the renovation of track with multi-functional sleepers and other improvements that, in the future, will facilitate the international operation of the Mediterranean Corridor. Curiously enough, this transformation is opposed by some rail staff, who see any change as an attack on their privileges. This opposition became apparent a few years ago when, even though it was decreed that any renewal of railway infrastructure in Spain would be done with multi-functional sleepers – which will allow a fast change of rail gauge when it is decided – during some of the renovations of the current route from Barcelona to the border, traditional sleepers were laid...

3. TOWARDS A NEW TRANSPORT SYSTEM AT THE EURAM LEVEL

From the above considerations, we can make planning proposals with a very different approach to the one currently used. They would push decision-makers to review the existing plans and, consequently, current investment programmes. This is what the *White Paper on Infrastructure in the Euram* ultimately aims to achieve. But we must never forget that it is the market that ultimately determines whether the economy, or in this case, the transport system, works as planned. The successful establishment of an integrated transport system for the Euroregion depends heavily on the ability of its operators (in the transport sector, but also industrialists and traders) to adapt to the new context. They should do so as part of their search for efficiency, which will allow them to compete on costs, based on their flexibility to network, on their readiness to innovate, and, ultimately, on their desire for progress. Therefore, we must see the *White Paper* as a partial approach to the problems of the transport and logistic sector in the Euram. There are aspects that must be addressed with the greatest urgency in parallel to the issue of infrastructure deficiencies of this sector. Business structure, training - at all levels -, administrative frameworks, all need to be transformed. Execution periods for public construction projects are very long and allow deep changes. As some of the weaknesses are so obvious, such measures could indeed be very profitable.

3.1. *The criteria to meet the challenge*

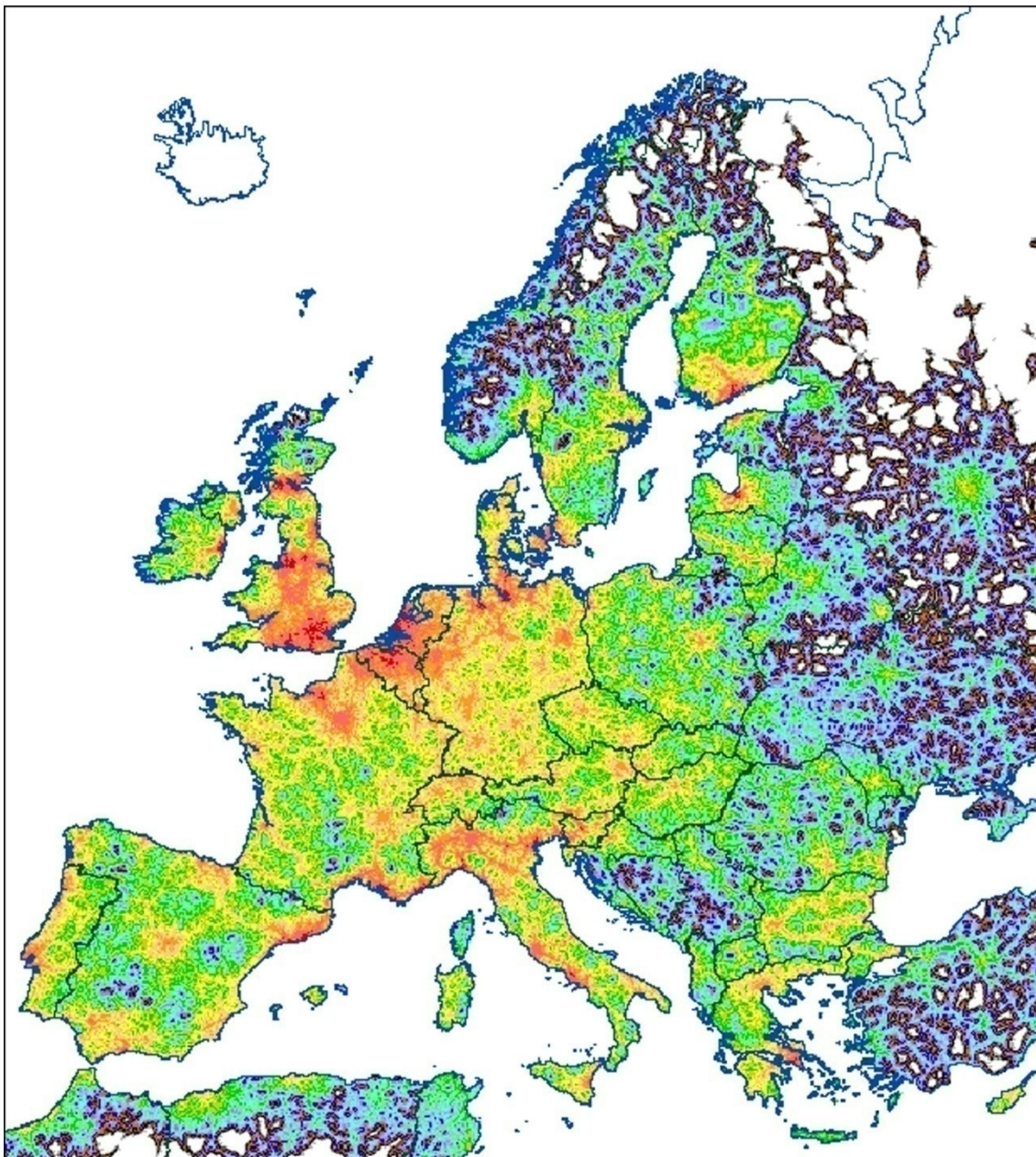
The improvement of the transport system should not be reduced to a matter of infrastructure. The focus on infrastructure remains, however, a well-established political cliché. With the excuse that it was necessary to improve the management of existing infrastructure before building new ones, neither one nor the other was done; at least in the Euram. Because curiously enough, most of the new dual free carriageways in Spain have been built in areas where there was almost no congestion, invoking regional development objectives. But it is also true that the construction of linear infrastructure presents greater difficulties in the denser areas. That is why our considerations on the transport infrastructure in the Euram requires us to take into account two basic criteria.

The first one is that, although an attempt to systematically optimise the performance of the transport system as a whole is fundamental, it is not reasonable to make policy based only on “soft” improvements. The provision of adequate infrastructure is a prerequisite to reach the efficiency that should be expected of the transport system in a developed country.

The second criterion is that, in a democratic society, we cannot ignore the social, environmental and political context when taking decisions on actions that will deeply affect land and society.

We will now introduce the criteria to make the system work, as a whole, more effectively. We will try first to properly set them in the right context, particularly regarding territorial matters. The Euram is strongly affected by its unusual geography, which has constrained its development. The Mediterranean and the surrounding mountains are powerful accessibility barriers. This explains why, wherever natural conditions have allowed reasonable access (natural harbours for maritime relations – those which first made long-distance journeys possible – and through the valleys to reach inland), land has been gradually occupied.

Accessibility (ICON measures) map of Europe. Where the natural conditions have allowed it, land has been gradually occupied by humankind



Source: Mccrit for the European Commission, ESPON 3.2 Study, 2005.

Geography has thus influenced the development of Euram's territory much more than in other regions such as Castile, England or Central Europe, with large areas remaining quite deserted or as rural areas showing very low demographic densities. These areas often have particular scenic and/or environmental values. But we should not forget that such values have only recently been "discovered", due to public interest in nature and ecological impacts, and no distinction has yet been made between the places that must be strictly protected and those places that require more moderate levels of protection, adapted to their real worth. This is certainly a complex issue, because environmental balance is difficult to achieve, and it is even more difficult when it must be protected against powerful economic and social pressure. However, as the environmental impact of infrastructure has become a typical media target, the political decisions on this matter are quite often somewhat irrational. We will return to this subject later, but it must be clear that an equilibrium should be reached between a reasonable, carefully planned, use of space, and the economic and social development of the region.

3.2. *A multi-modal (or co-modal) approach*

If we talk about the transport system at the Euram level, it essentially means referring to long-distance journeys, and these can only be effectively carried out if there is a good integration between the sub-systems in the Valencian Country, Catalonia, the Balearic Islands and the Eastern Pyrenees, including Andorra. These transport sub-systems are marked by a long history of centralism, both by the Spanish and the French States. The challenge at the Euram level is to connect these subsystems and relate them with their surroundings, in particular the trans-European Transport Networks (TEN-T).

The usual approach to this type of integration both inside and outside the region is to start with each individual mode of transport. It is, without doubt, a simple formula and, the one adopted to create the TEN-T. But it is not the adequate formula to design an efficient and sustainable system. In fact, in the 2004 revision of the *White Paper on the European Transport Policy*, the very same European Commission accepted the need for a multimodal concept, in line with what I had already advocated in my book on the TEN-T in 1999, although it is now renamed *co-modal*. What is necessary, in short, is to find, in response to a demand which will continue to grow whether we like it or not, the most appropriate systemic response, either using a single mode or a combination of transport modes. What finally matters is to ensure the most effective solution using the full potential of the system. It is thus neither necessary to keep open all the options offered by the different modes of transport; nor systematically promote a specific formula; rather, we must discover which uni-

modal or intermodal (combination of different modes) alternative better responds to the existing and expected demand. This depends on the specific features and functions of the alternatives on offer, which are very much determined by technology.

This approach, which would be obvious in the business world, would be really innovative in the transport sector, which operates within a public sector framework and is marked by interests that are very difficult to justify, but which are embedded in the system since many years. We can find in each transport mode substantial dysfunctions. This explains why it is so difficult to propose horizontal solutions. Thus, as regards roads, which are the basic support to all mobility, the arbitrariness in the application of tolls leads to grievances due to the unfair treatment felt by those users (and regions, in some cases) who pay them whilst others don't. In the rail and port sectors, many workers have contracts virtually equivalent to those of public sector employees, which means they do not have much interest in becoming competitive... not to mention the super-privileged airport and airline employees! Sometimes prestige reasons explain severe dysfunctions due to a total lack of regional vision: What city does not want to have its own airport, even if there are adequate alternatives in the region? Obviously, inefficiencies do not fall on the back of those making decisions or directly benefitting from them, but are usually at the expense of the citizens, who have little chance to complain about how their taxes are used.

The proposals below are therefore based on the multimodal concept, within an integrated transport system, and on the optimisation in the use of society's scarce resources. These premises are particularly relevant in the Euram, because the modest provision of transport infrastructure and the shortage of public funds to change the situation mean that we must be especially careful with investments to ensure maximum efficiency. This efficiency can only be achieved by using the comparative advantages of each transport mode and by being very receptive to innovation, both in the transport means and in the application of information and telecommunications technology.

4. TRANSPORT INFRASTRUCTURE FOR THE EURAM

Each mode of transport has technological constraints that severely affect its capacity as a service provider. This explains why a mode is suitable for certain tasks but uncompetitive for others. Transport using a cart driven by animals was dominant for many centuries, but nowadays it is certainly rare in developed countries. To place each mode of transport in terms of competitiveness for each situation it is essential to have a good knowledge of its operation and its potential in the multimodal context. From this basis we can propose solutions for the Euram and analyse how the various modes can be integrated at the level of the Euroregion to make the transport system work efficiently.

4.1. *Ports*

Modern ports need depths suitable for increasingly larger ships, more spacious docks and more specialised equipment (cranes, etc). This has led to the disappearance of some historic ports, with very serious repercussions on the local economies concerned, and the construction of large external ports, such as those of Barcelona, Tarragona, Valencia and Sagunt in the Euram. But a port not only depends on its capacity to receive ships and cargo; there must be enough maritime services (preferably regular ones) so that freight can be dispatched in a short time, and these services must be reliable. Therefore, with some exceptions, like the pure transshipment ports (Gioia Tauro, Algeciras), there must be enough commercial activity in the area served (the hinterland) to convince shipping companies to include them in their routes.

The concentration of loads is fundamental to provide good services to general cargo and, in particular, to containers. So is the service that the goods receive on land (fees and the time that must be spent in the port, which depends both on the customs and other controls and on the efficiency of the terminals). All of this means that, the greater the amount of freight crossing the port – that is, the greater the hinterland – the greater the possibility of attracting intercontinental services, which are those of maximum interest to us. To extend the hinterland beyond the territory that can be considered captive due to its proximity to the port, the overall cost of moving freight – which includes port handling fees and land transport, but also blockage time for freight – must be competitive.

It is evident that the final cost of an imported product to the Euram coming from Asia via the Suez Canal would be lower if it arrived there directly instead of passing through the ports of northern Europe, provided, of course, that its passage through Euram's ports is not disastrous. The

twirl through the North Sea ports happens today because the big containerships, which make very few stopovers in order to be as profitable as possible, rarely stop in the Mediterranean. To increase the competitiveness of the Euram, deriving from imports that would be cheaper than in northern regions of the EU, we should attract intercontinental lines to the ports of the Euroregion. To do this, Euram's ports should concentrate traffic flows and present themselves as a single, powerful waterfront. The required coordination could lead to a possible restriction of competition between ports within the Euram, but this would not be too harmful because, in reality, competition comes from other shipping fronts.

The Euroregion only has potential for two major ports, which are clearly Valencia and Barcelona. Some other ports are certainly important locally, and may also have some weight internationally in some specific cargoes (oil, coal, wood, cars, paper, etc.), but the large flows of containers worldwide cannot be dispersed. And to take them away from the direct routes, the Euram must be perceived as a single shipping front, providing coordinated services and very good land and short sea shipping connections.



The Euroregion only has potential for two major ports, which are clearly Valencia and Barcelona.

And here we cannot avoid talking about multimodality: maritime transport is, in most cases, only one of the links in the transport chain. The transport of freight by land weighs heavily in the total final cost. And within the land transport, intermodal transfers (from ship to terminal, from there to truck or train wagon, from train to truck to reach the destination, etc.) are not only relatively expensive, but also weak points of the chain, both in terms of travel time and service reliability. No

wonder that the amount of freight that enters and leaves the Euram ports by rail is almost insignificant. In Valencia, although its terminal is designed for the use of rail transport, this method only carries about 3% of the containers that enter and leave the port. In Barcelona, the overall share of the railways in land transport is only 1.7%, and half of this is potash in bulk from the mines in the Cardona area, in Central Catalonia.

In this context, we can say that only ports with specific major cargo traffic allow an efficient integration with the railways. The key issue is the ability to easily fill block (i.e. complete) trains. This can only come about if either of two conditions are met. The first is that the product is either massive and specific (in bulk, like coal or other mining products such as potash and cement, or grain, etc.) and trains can be loaded and unloaded directly from the ships, or allows simple loading and unloading processes (for example, cars). The second is that a large amount of the freight has a specific origin or destination in the port's hinterland.

This situation is very difficult to achieve with containers, because they have scattered origins or destinations inland. A competitive situation for rail transport clearly exists when trains can be fully loaded, directly from the ship, with containers that all have a single distant destination or vice versa. This is an unlikely situation. The real possibility for using the railways is by selectively loading from the seaside terminal those containers having their destination in a specific rail node from where they are distributed by truck. Operations of this type, already in force in some Euram ports, are complex, because wagons on the track cannot be moved easily and because it is a rarity to have available, at the seaside terminals, the large esplanades needed to select and store the containers while they await the correct train. That makes interesting the possibility of unloading the boxes from ships directly onto trains, either as they leave the ship or after a quick selection, and moving them quickly out of the port to a freight concentration and distribution point for maritime cargo, located inland; this is what is called a dry port. These dry ports may be near the seaport and act, in fact, as an inland shipping terminal, or located at a distance, in points offering suitable conditions for the distribution and collection of sea-bound containers.

These distant dry ports make sense in terms of location, for example in the case of Barcelona and Valencia, when they are located in cities at considerable distance and able to generate demand for frequent block trains: Madrid, Zaragoza, perhaps Toulouse and Montpellier in the future (for Barcelona). Other options such as Seville, Lisbon and Bilbao would require a far more complex convergence of interests between ports.

We will examine the case of dry ports at short distances later, when we discuss the internal connections of the Euram. But we should remember that, for rail transport to be competitive so they can help extend the hinterland of the Euram ports, the journey between the point of arrival or departure and the port must be long enough so that operations at the terminals represent a modest

portion of the overall cost. And these operations must, obviously, be highly efficient and offer a fast and reliable service; in rail transport, this only occurs when there is high frequency of scheduled trains.

What we may conclude here, in terms of the Euroregion's external relations, is that the external presentation of the Euram shipping front should be based on showing that the major container ports (Valencia and Barcelona) work in a network, sharing the same dry ports, which cover a hinterland that includes most of the Iberian Peninsula and southern France. This, together with the provision of specialised ports like Tarragona, Sagunt, Port-Vendres, Palma (for cruises), etc, would show to ship-owners and Asian freight shippers a powerful image that could attract stopovers of liner ships. This presentation of the Euram's shipping front would be very competitive with those offered by the North Sea ports (Antwerp, Rotterdam and Hamburg), as they can hardly present themselves as part of a coordinated service supply, because the competition between these ports, which belong to different states, is fierce.

This is as much as the port-rail intermodal option may offer for long-distance freight transport. Apart from block trains, the Euram's intermodal combination must essentially remain truck-port⁶, which is presently dominant. In this field, it is more difficult to suggest Euram-level cooperation outside the region, because we are talking about a fragmented market. There are, however, some technological developments that make us envision new possibilities. And here we can associate Euram's port policy with the Mediterranean Corridor concept that encompasses both the inland links along the coast and the external links with the distant hinterland, both north and south.

Its seaports are the great gateways of the Euram, and therefore, they are also essential points for internal transport. The backbone of the Euram is the Mediterranean Corridor, which stitches the ports together from inland but it cannot include them in its structural axis. The ports must be terminal nodes or extremities for the Corridor, but it is obvious that port zones cannot be junction nodes for passing north-south traffic because access to them is complicated and they have enough difficulty handling their own traffic.

We have already mentioned that freight enters and leaves ports mainly by truck. To reconnect them to the Mediterranean Corridor using rail, we can imagine block trains serving distant dry ports or important clients, or we can think about establishing dry ports located inland, at short distances from the port and in the immediate area of the Mediterranean Corridor. These nearby dry ports, working as distant maritime terminals, free the container terminals of the port of a substantial part of their storage function, and they substantially increase their capacity to serve ships.

6. The Euram ports cannot benefit from the advantage of some North Sea ports, particularly Rotterdam, heavily using inland waterways.

The relationship between a terminal and a dry port can represent a large volume of traffic, and is therefore well adapted to rail transport. However, the technical demands of railway terminals, in particular in regard to the minimum size required and to slope constraints, make it very difficult to find spaces in the Mediterranean Corridor that meet these requirements and at the same time are sufficiently close to the ports. In these cases, as in Barcelona, it may be more practical to adapt to the topography, by placing esplanades at different levels and serving them with trucks or automotive platforms. We can, however, place a combined transport (truck–rail) terminal, as large as allowed by the site, at the most convenient height to connect it with the main rail line. This terminal, which should be designed to offer a very efficient service with a minimal use of space, would be a nodal point for rail freight in the Mediterranean Corridor. Until there is significant through-traffic in the Corridor, the terminal could serve to bring block trains of containers from the port; but we must take into account that, for such short distances, it is usually more efficient to transfer containers directly by truck from the port to the esplanades, because trucks will be needed, in any case, to take the containers from the train terminal at the dry port to the esplanades situated at a different level.

Starting from this premise, it seems particularly interesting to consider, with a fresh mind, the connection between these container terminals and the dry ports in proximity. Apart from the rail connection with seaside terminals, which should also serve distant dry ports, we can imagine a purpose-built road connection for trucks, with almost no intermediate exits. This dedicated route makes especial sense if we expect to use new technology. In this way it could be used, firstly, by platoons of trucks with distance-control and braking systems which, with today's technology, already provide very high capacities. In the longer term, we can foresee the use of driverless automotive platforms, an improved version of the Automated Guided Vehicles in use since several years at the container terminal in the Maasvlakte, Rotterdam. As there would be no interference with cars, the use of mega-trucks (trucks with a double platform that can transport as much as eight TEU) should be possible. This kind of infrastructure would be easily paid for with tolls.

Regarding the environmental issue, it should be noted that, at the time when we could have an infrastructure of this kind in operation, there will be competitively-priced trucks with electric motors on the market, and these trucks will be very suitable for these short journeys. In fact, a service of similar characteristics is already in use in the port of Los Angeles⁷. As a city with serious air-pollution problems, it has opted for such vehicles, even though they do not yet perform well enough.

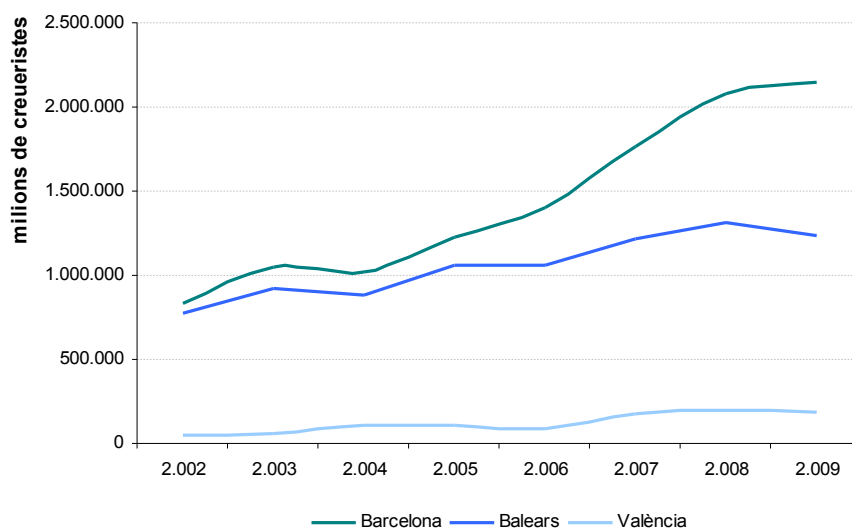
What we wish to put on the table is that the new technology needed for the type of solutions

⁷Based on a fleet of 25 trucks with a range between 60 and 100 km, but still requiring to charge their batteries for 3 hours between shifts. It is a first step towards really competitive electric trucks.

proposed is already operational. What is lacking, at the moment, is the willingness to put them into practice. The success of the Euram as a great European logistics gateway requires taking a qualitative leap that will give its ports the conditions to be able to compete in cost and reliability with the ports of northern Europe. Innovation, based on networking and on the intelligent application of new technology, is the clearest way to achieve it.

Naturally, the discussion on ports has centred on the question of freight, but we must not forget that the maritime transport of passengers is essential for the cohesion of the Euram, as the Balearic Islands represent a fundamental part of it and they depend heavily on ferries. In this case, the improvement of infrastructure providing domestic service (the traffic between the mainland and the Balearic Islands) has been driven by the spectacular development of external traffic, because Euram ports receive a large number of cruise ships. Beginning with virtually no traffic in the early nineties, the Port of Barcelona now hosts some 2.2 million cruise passengers, and Palma 1.1 million, while Valencia has now reached 200,000 passengers. This massive influx of users has allowed ports to improve their passenger terminals, with very positive effects on Euram's internal traffic.

Growth of cruise-passenger traffic at major ports in the Euram, 2002-2009



Source: Spanish State Ports, 2010.

Euram's ferry connections require a good balance between a high frequency of departures – implying the use of ships of a size adapted to the demand and fulfilling the requirements of continuous service – and the availability of sufficient space in the port terminal to accommodate all the rolling stock waiting to get on board. With good management of the docks and the timetables, there should not be particular capacity problems for internal ferries in the Euram.

This simple management scheme, which should be sufficient to deal with internal traffic, is insufficient in the case of cruise ships, because demand is highly variable. Ports must be careful not

to create an excess of terminals. Cruise holidays are a trend that is bringing wealth to the Euram, but any major incident (due to some misfortune at sea, an act of terrorism, etc.) could shatter the current optimistic outlook.

4.2. Railways

Following the outline of the section on ports, we will first discuss the role of rail on goods transport, and then refer to passenger transport.

We have already mentioned the structural difficulties rail has in order to provide the cheap, flexible and reliable service that an increasingly demanding market calls for. The trend will stay because it is the application of new logistics techniques that is at the origin of the strong quality requirements that have fallen upon transport operators. Flexibility is paramount because the optimisation of logistic chains depends on variables that have demonstrated large fluctuations, especially in recent times. For example, the low interest rates presently at hand reduce the pressure to minimise stock and transportation time, but the lack of bank credit for many companies increases it in the opposite direction...

The objective pursued by logistics operators is having the ability to adapt quickly to the constant changes in their customers' demands. Large freight shipments, outside the major trade-flow concentration points (i.e. the ports receiving imports from the Far East) are often constrained by the needs of industrial and commercial organisations that work with just-in-time strategies. This means that shipments are becoming ever smaller, and must reach their destination very punctually. Therefore rail will have intrinsic difficulties to compete in the future, because the market segment in which it has competitive advantages (transportation of large loads between two distant points) is becoming smaller. The alternative to the loss of importance for rail transport would be to concentrate low-volume shipments in order to fill entire trains that connect the cargo concentration points very regularly. To do this, fast and cheap connections between these concentration points and the shippers and receivers must be created. But this would be insufficient without an effective management of all movements. In summary, rail has difficulties in competing with other modes, except in the cases mentioned above, and, although its environmental advantages over the present use of trucks are clear, it seems that these advantages are insufficient to compensate for the hindrances. This situation of poor competitiveness would probably remain even if appropriate payment mechanisms for externalities (effects outside the transport system) were in place, as recommended by economic theory.

On the other hand, with the construction of high-speed lines, many passenger trains will no

longer use the conventional lines, which could satisfy with modest cost and reliably more demand for block trains, especially between the Euram ports and the dry ports in the hinterland. As regards the Mediterranean Corridor, Ferrmed's option, which extends the Corridor to the north and to the south, is an interesting concept provided that it is economically and financially viable. To be so, the promoters should abandon their current approach and return to the original idea of a simple linear corridor and eliminate from it most of the branches that have been incorporated over time. With a modest investment, concentrated on the basic corridor, with the aim to increase capacity and to separate passenger and freight trains wherever possible, it could be possible to provide quality services, with block trains, between points of cargo concentration. By opting for a small number of rail freight terminals, including specialised port terminals (in containers, cars, some bulk goods, etc.), dry ports and sidings for important clients, the complexity of the current system could be substantially reduced. It would then be possible for rail operators to offer competitive services. The present model, based on the dispersion of many terminals to "serve a greater area", does not work because volumes between nodes are insufficient to warrant frequent and reliable services.

Ferrmed's concept could therefore serve to bring rationality to rail operation in the Euram, but only when the proposals are realistic, that is, when:

- a) there is a drastic reduction of rail infrastructure in the Mediterranean Corridor, to concentrate on the basic line and a minimum number of freight terminals;
- b) the investment for the adaptations required in the basic line is reasonable and, therefore, much lower than the figures often mentioned,⁸ and
- c) the management of the infrastructure ensures reliable services and rail operators act in a truly liberalised environment, competing on price and quality.

In any case, if Ferrmed's concept is to work, it must resolve the key issue of the change of rail gauge in the Spanish network, and also the crossing of the French-Spanish border. Despite the new rail connection between Figueres and Perpinyà, issues of interoperability (power supply, signalling, etc)⁹ may continue to block international rail traffic.

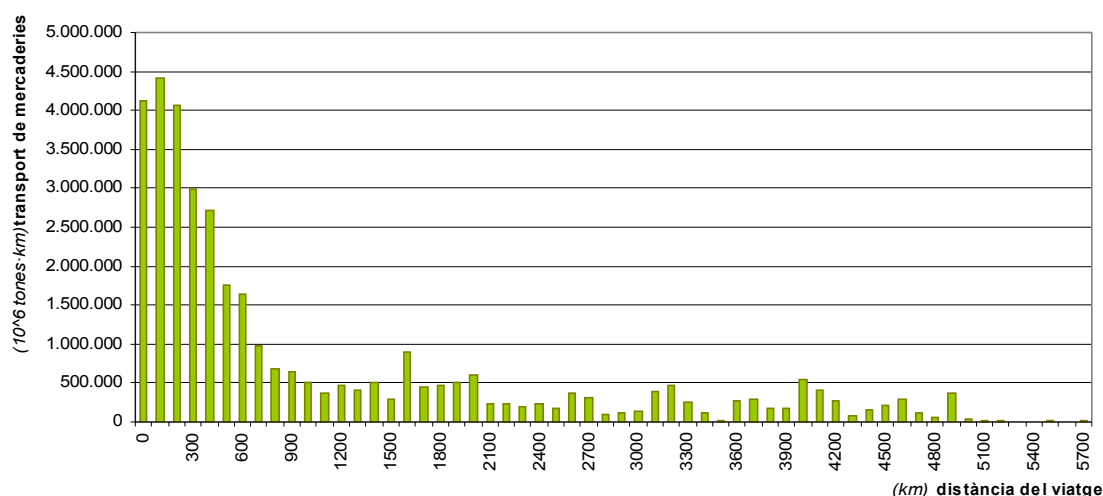
8. To see the absurdity of these numbers, one need only say that the estimated investment for Ferrmed until 2025 is about 210,000 million euros (2007), a figure that is seven times greater than the amount which the American millionaire Warren Buffet recently valued Burlington Northern when he acquired the entire company (at a price that many financial experts believed was excessive). Burlington is one of the two largest railway companies in the United States. It has more than 50,000 km of rail track, 230,000 wagons, 40,000 employees... and it is profitable for its shareholders! With the planned investment, the Ferrmed basic network would include 8,274 km of rail track, which would allow the passage of 1,500-metre-long trains, half the length of most Burlington trains.

9. Essentially due to unwillingness to cooperate and to vested interests.

The improvement of rail services, which would require investment in infrastructure, could achieve an increase in the market share of rail in the corridor that connects the Mediterranean ports with Central Europe, a corridor that is expected to carry increasingly important volumes of freight.

In any case, we must be aware that the fundamental condition to make railways work in the Mediterranean Corridor is that the European network meets the expectations that the public authorities, both in the EU and in member states, have placed on it. And we must also understand that, however much they may want to promote rail transport, its potential to carry large amounts of freight traffic is very modest. This is because it cannot provide most of the short distance services – the great majority of shipments in Europe – because they are the realm of trucks, and because the rail share in goods transport modal split is very small (less than 10% in any case although, for some very specific European corridors, it may reach much higher figures). In fact, railway infrastructure, at least according to its managers, has so little free capacity that it could not absorb even the equivalent of two or three years of total growth traffic unless large investments were made. Therefore, as we already suggested, the overall rail service for the Mediterranean Corridor must be centred on those services in which it is competitive. Rail must serve the ports and logistics operators, instead of aiming at providing a universal service, a criterion that only made sense many years ago. When we speak of a multimodal vision, or co-modality, we are referring to a joint and efficient use of different modes of transport, including rail, to create complex chains that compete with each other under strict market criteria whilst covering all its external effects. If the Euram places itself as a leader in this formula of optimisation for the freight transport system, it can effectively become the great logistic gateway for southern Europe.

Most freight shipments in Europe are carried less than 500 km



Source: Transtools, 2005.

Passenger transport by rail in the Euram must also be considered from the same multimodal perspective. In this case, Euram's geography supports the competitive position of a modern railway. As people move without outside assistance, inter-modality is less penalised. But easy transfers are also here the key to the success of railways as a means of transport, and also in this case a pending issue. To enhance the position of rail in interurban transport, it is necessary to substantially improve its integration with road and air transport to facilitate the movement of passengers in order to reduce total travel time and the inconveniences of changing vehicles. Commercial operation with integrated fares is also an important element, as has been shown on a metropolitan scale, but we will not discuss it here.

High-speed rail is an appropriate response to an area with large conurbations separated by a few hundred kilometres and with economies and social relations that are greatly linked. This is true in the case of the Euram and of some of its connections with the outside world, including Madrid and Zaragoza, and possibly Toulouse and Montpellier in the future. The use of rail in the Mediterranean Corridor becomes unquestionable here, linking together its major cities, from Alacant to Perpinyà, with services that are difficult to improve on by using road, due to congestion and poor access to the city centres. Neither is air transport very competitive for most domestic trips, because they are short-distance and do not allow high-frequency services. Railways, on the other hand, grouping together intermediate trips, can provide fast and very frequent services. The challenge is achieving a fine-tuned commercial operation with some direct services and other, less frequent ones, for small towns.

High-speed rail services in the Mediterranean Corridor are more competitive than in other corridors in Spain due to its high population density and strong economic relations. They may also play an important role in the integration of the Euram's airports.

The challenge here is twofold: to see if the high-speed line can be used to provide suburban-type services (medium-sized towns at a distance of around 100 km becoming "suburbs" of major urban areas); and to efficiently integrate access to stations. This means improving both the parking, as in the *park-and-ride* model, and complementary public transport services, which, globally, are those that allow the "irrigation" of the region and, ultimately, improve the competitiveness of rail. However, the need for both investment and administrative activities (concessions on public transport services, etc.) does not seem to have been fully assumed by the Euram's authorities.

Urban mobility policies must favour fare integration, public transport and non-motorised means of transport in cities; and in metropolitan areas, they must favour bus lanes, reserved platforms or means of transport with greater capacity, but closely related to demand, to avoid increasing operating deficits. In city and town centres, we must tend towards regulation of free parking at ground level in order to regain more urban space, expand pedestrian areas and encourage the use of clean vehicles. We must bring about a more rational use of private vehicles.

The fundamental issue is, however, the spatial impact of high-speed rail on the Mediterranean Corridor. It could certainly lead to the suburbanisation of some cities like Castelló or Girona, and, globally, it could further tip the balance of demographics and economic activity towards the coastal corridor. To ensure balanced development there must be a proactive policy to improve the connectivity of the inland areas of the Euram. This cannot be achieved efficiently by rail, because potential flows are far below those that could justify investment in high-speed lines (the only ones that could compete with road transport in low-density inland areas), which besides, in a territory with a complicated topography, would be extremely onerous to build, due to technical requirements (minimum curve radius, slopes, etc). Therefore, we should not support projects such as the Catalanian Horizontal Rail Axis. This axis does not even meet the condition of integration in the Mediterranean Corridor, and therefore does not have the possibility of becoming an alternative option in the unlikely event of lack of rail capacity in the Corridor. Neither can it hope to collect, as an inland axis, the minimum amount of passengers and freight traffic to justify its construction. There are certainly many infrastructure transport projects in the Euram where it is much more sensible to use public resources (particularly scarce at the moment).

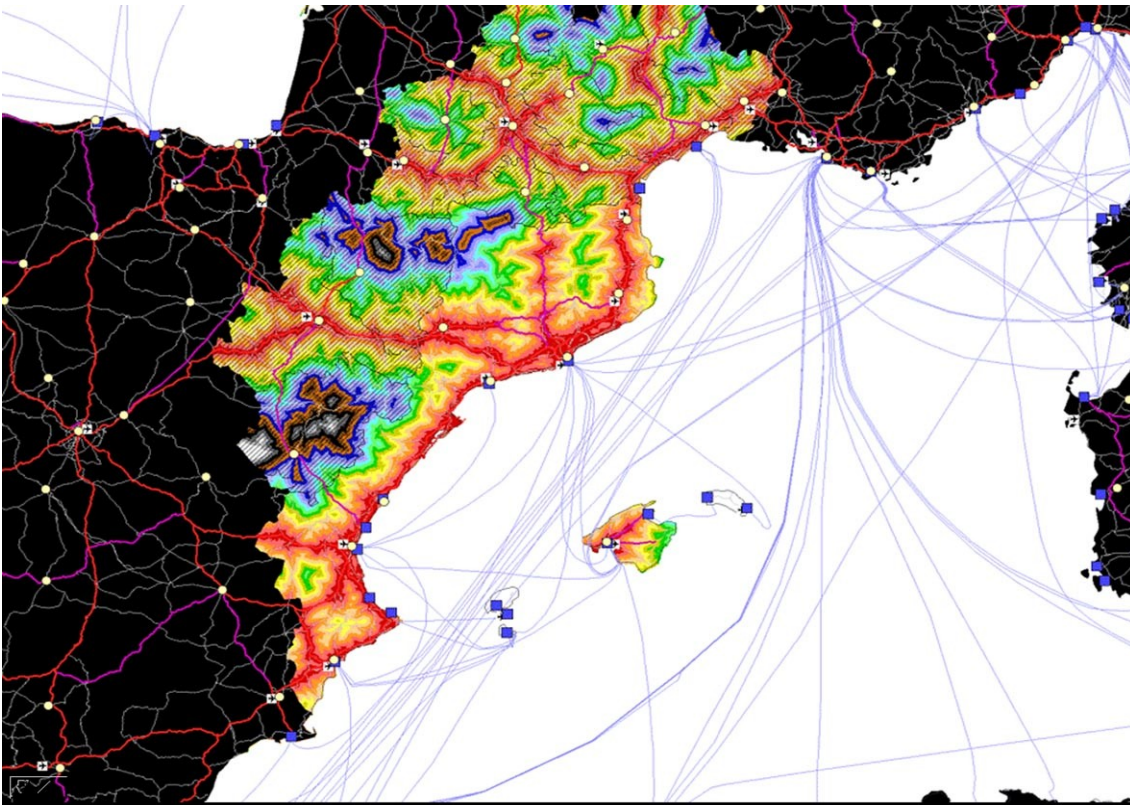
4.3. Roads

As we have said, road transport is, for now, the universal mode of transport. It connects all the others and provides access to the whole territory. Any concept for the transport system of the Euram must be based on this premise, if it is to be realistic. The existing road network is relatively dense and adapted to the demand, but it has some deep imbalances that should be corrected. The most surprising flaw is the inconsistency of the toll system. Economic logic would have road users pay for the use of infrastructure according to the marginal cost. However, as this does not cover the investment, it would be reasonable to agree on payment according to the service provided. Having a free dual carriageway next to a toll-paying motorway; or paying tolls on certain axes whilst similar ones are toll-free does not seem coherent with a policy of optimisation of resources. Particularly if no clear reasons for such a situation are provided to the public. Decision-makers are not bound to apply uniform criteria; but the criteria applied to payment for use should be clear.

This leads us to a second imbalance that should be corrected. Because of their impact on economic development, roads are a key factor for spatial structuring and for the integration of neighbouring regions. Nowadays a good mesh of high-capacity roads is essential in order to provide the whole territory of the Euram with the connectivity conditions required to participate in the “space of flows”, the space accommodating most economic transactions and ultimately supporting the globalisation process. This means that it is necessary to improve, in particular, some internal roads to provide better links to the main axes and a number of connections between neighbouring regions belonging to different administrations, in particular between some areas in the Valencian Country and Catalonia, and between the northern parts of Catalonia and the non-Catalan Pyrenees. The extension of the River Llobregat Axis is one example of this. Some connections with Andalusia, the Region of Murcia, Castile-La Mancha and Aragon should also be improved to keep (or extend) the hinterland of the Euram’s ports.

<p>The basic network of motorways in the Euram must be completed, so that it can meet the growing need for mobility. The toll system on the motorway network should be reformulated to make it a tool for more efficient traffic management. In the medium term, we should evolve towards a real-time charge on vehicles (depending on the route, on the number of occupants, etc).</p>

Connectivity to the high-capacity network for different areas of the Euram in 2006, before the *Mudejar* [Sagunt – Huesca] dual carriageway was opened



Source: Mcrit, 2006.

In short, the overall view of the road system involves the use of existing roads and the construction or the improvement of certain sections to create a mesh (more or less in a grid, to provide homogenous coverage) that will wrap the whole Euroregion, allow good communication beyond its borders and provide a quality service to the major nodes: ports, airports, major cities, high-speed rail stations, poles of tourist attraction, etc.

Aside from introducing consistency in the question of tolls, we should also substantially improve the exploitation of the road network, particularly with consistent and standardised signpost information system, and with better traffic signalling criteria. Traffic management should be based on efficiency (including safety and environmental impacts), so regulation should be designed to serve motorists who want to travel safely, but also quickly and comfortably. In this regard, instead of supporting traffic restrictions, it would be more interesting to move forward in the implementation of intelligent transport techniques, some of which depend on road infrastructure. We face very great changes in vehicles (automatic driving, electric motors, etc.) which will lead to changes in infrastructure: it should be much more equipped with communications technology and with new services. These changes, and in particular, electrification and the development of other, less-polluting technologies (like hydrogen-based engines) will bring about new concepts for

infrastructure. For example, much longer tunnels would become operational for automobiles, because they will not need as much ventilation as today. There will also be more specialisation in road types, like those we have talked about for the connection between port terminals and dry ports, or roads exclusively for cars (which would be much cheaper to build and maintain). The Euram should be a pioneering place for innovative ideas in the transport sector, taking advantage of the fact that some of the most important companies in the world dedicated to the exploitation of motorways under concession are Spanish.

The basic road network must be improved and reconditioned to remove all through crossings, level intersections in roads with heavy traffic and road sections going through urban areas. When possible medium and long-distance traffic should be segregated from local traffic, to improve safety and to facilitate the steady flow of traffic.

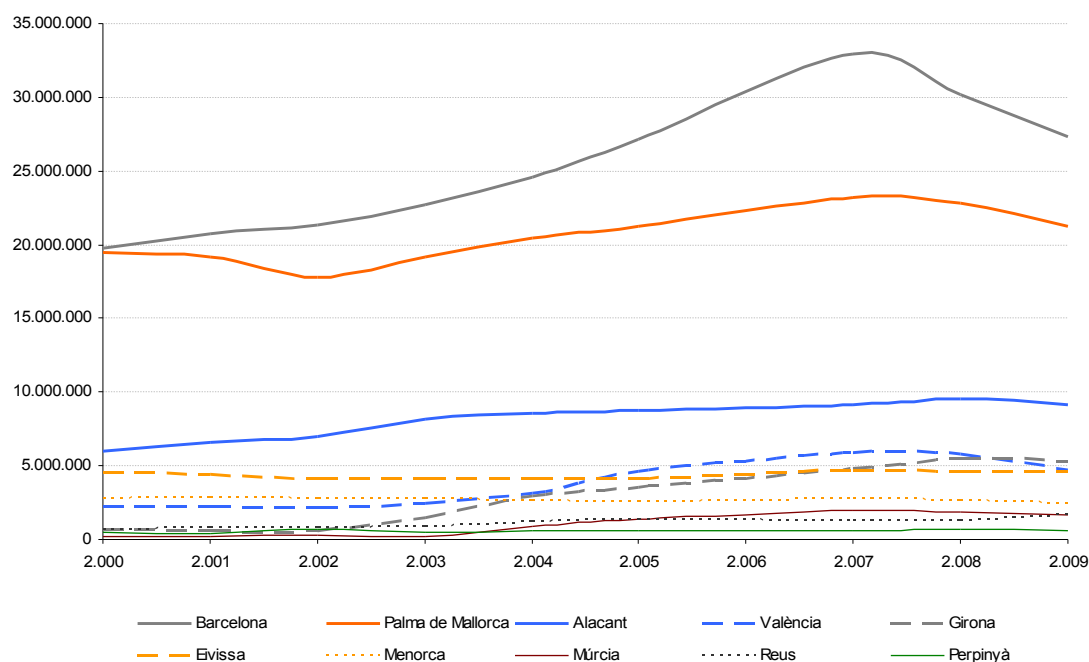
The intermediate roads – local and district roads between the streets in towns and cities and the roads that are part of the basic network – have suffered a deficit in investment and planning for decades, and now require preferential attention and a specific type of action allowing the integration of the requirements of different users (vehicles, public transport, cyclists, pedestrians...) for each stretch of road.

4.4. *Airports*

As for airports, the considerations we have made – on the need to concentrate traffic to ensure regular flights – lead us to think of two key nodes in the Euram: Barcelona, as a possible intercontinental-type hub and with a clear Euro-Mediterranean vocation; and Palma, as a major European tourist airport. The others have a more regional vocation, with Valencia and Alacant as particularly important nodes, notably for European destinations, whilst Girona and Reus - as satellites of Barcelona - and Perpinyà, have their development prospects tied to tourism. This would also be the case for La Seu d'Urgell Airport (in the Pyrenees), which will remain closely linked to the international projection of Andorra. The rest of the airports and airfields will have more or less important specific functions, but cannot be seen as nodes of interest at the Euram level.

The current capacity of the airport system in the Euram, with the extensions planned, is generally sufficient in the short and medium term. The current management model of the Spanish airports must be transformed to allow the participation of local and regional governments in certain regulatory aspects, and to give private companies an important role in their management and their commercial exploitation. This would allow a better range of destinations and higher service frequencies at the Euram airports.

Air traffic at airports in the Euram, 2000-2009



Source: AENA [Spanish Aeronautical Agency], 2010.

Multimodality is also important here. Thanks to high-speed rail, which will connect Barcelona to the airports of Girona and Reus, it is feasible to call a joint operation model, as if the two airports – which are located less than one hour away – were distant terminals of Barcelona Airport. On the other hand, the airports in Castelló, Lleida, and Perpinyà, when these cities are properly connected to Barcelona Airport (and in the case of Castelló, to Valencia Airport), will have to find particular specialised functions, because multimodality allows more efficient combinations than direct flights.

Indeed, for regional airports, there are very few destinations enjoying sufficient demand to allow the provision, with commercial aircraft, of regular services with the minimum acceptable frequency to make them attractive to non-tourist travel. When there are few services and at inconvenient hours, travellers for business or social reasons prefer to use intermodal services, like

cars, coaches or trains - especially if there are direct high-speed services - to gain access to a hub (in the case of the Euram, the major airports of Madrid and Barcelona). On the other hand there may be an acceptable demand, in some seasons, for low-cost tourist trips in some regional airports. However, the aviation model that has spread throughout Europe, based on charging the low-cost airlines virtually nothing for airport services - and even subsidising them - can rarely justify large additional investments in capacity, and much less the creation of new airports. Certainly, there is a justification for airports in areas that need aviation in order to be suitably connected to the rest of the world. This is true of islands, areas difficult to reach by land, etcetera, that depend on these airports for their development. In the case of the Euram, we could include in this situation La Seu d'Urgell Airport and some improvements to the airports on the Balearic Islands.

The proposed airport policy formulation, which may come into conflict with some recent decisions and investment proposals, is considered the most appropriate for the proper functioning of the air transport sub-system. However, the required efficiency will only be possible if the Euram's airports enjoy independent management. Competition between airport hubs is obvious, and Barcelona must market itself as an alternative to Barajas Airport (Madrid); and this requires independent management. But it would be a mistake not to coordinate the operation of Catalan airports, and even the Euram's ones, because in this case we cannot talk about competition, but rather about the need for coordination to optimise the services for users of commercial aviation. In this sense, one of the outstanding issues is air freight. The great Mediterranean logistics gateway needs – apart from providing good service to businessmen and employees in the sector, who obviously often travel long distances – to be complemented with a very efficient express freight transportation service. Coordination between airports is also necessary for a good exploitation of unused airport capacity for freight.

5. PUTTING THE IDEA INTO PRACTICE

5.1. *Lots of difficulties and constraints*

A transport system like the one we propose cannot be created in a short period of time. On the one hand, there are obvious technical constraints: a) we must plan the system in some detail, based on objectives and criteria that must be more elaborate than those presented here, and these should be previously agreed by consensus among the main political groups, because this is a requirement for activities to be implemented over long periods; b) investment projects require quite a long maturation time to optimise them from the design, economic, social and environmental viewpoints; and c) the execution of the works lasts a very long time.

On the other hand, there are administrative factors producing increasing delays in the implementation of more infrastructure. EU legislation requires certain procedures covering a variety of aspects, from the need for a strategic environmental study for plans and major projects and for environmental impact studies at the project level, to the compliance with complex bidding procedures. It has thus introduced a whole new series of steps that have extended the periods of decision making and execution.

Finally, new funding models, especially those that include private sector participation, often involve complex arrangements that can delay the start of the works.

Most existing large transport infrastructure began operation at least ten years after their initial proposal was made. Such long time-spans, apart from the political implications that we have already mentioned, can significantly affect the usefulness of the project itself: it can become technically obsolete, or, more frequently, it may come too late. This means that the optimum moment to put it into service has passed, and that the congestion, environmental, etc, costs of the delay are much greater than if the investment had been made earlier. We often forget the importance of timing in the efficiency of an infrastructure, but it is clear that delays have deeply penalised the regions that make up the Euram, which suffer from years of serious deficit in infrastructure provision.

We must also recognise that some of the causes of the deficits originate in the Euram itself. Possibly due to a lack of attractive political options, there is a profusion of movements opposed to everything that public authorities propose. These movements, a curious mix, often cobble together interests that are even contradictory at times. In general, they are reactionary movements, in the sense of reaction to change, both for environmental and social questions and for interests that are sometimes spurious. The NIMBY (*not-in-my-backyard*) phenomenon has a strong anti-social component that is supported by well-intentioned, but often unrealistic groups. The positive side of these movements – which despite their low weight in society, have managed to delay some major

projects – is that they force public administrations to correctly perform the necessary consultation exercises with affected citizens, and to treat them properly; and this often means that projects improve their social and environmental aspects.

We must recognise that the politicisation of decision-making in matters that are essentially non-divisive has led to a lack of clarity in decision processes, which has helped to give credibility to opposition and anti-system groups. To carry forward the substantial change of model proposed for the Euram, we should go back to processes framed by technical considerations; and ensure the full dissemination of proposals; the consultation of citizens and the respect for their proposals. Finally, greater attention should be paid to explaining the adopted solutions to the greater public. In short, we should move towards a more rational and transparent process that ensures the overall interests of society.

5.2. The challenge of financing

As a final point, we offer some considerations about the funding of the projects that must be set in motion to provide the Euram with the infrastructure needed to integrate its transport system. As we have seen, this integration is an essential condition for the regions that make up the Euram to grow more and in a more balanced way.

The issue of financing is particularly complex here, because the responsibility for investment in transport infrastructure lies in the public sector and – as we have already explained – there is a difficulty in coordination and decision-making as regards the Euram, because they depend on a variety of administrations. In any case, infrastructure is paid for by either the user or the taxpayer. In the Euram, major infrastructure to interconnect different political regions is usually the states' responsibility. Therefore, pure public finance is particularly difficult to attain. This is because – despite recent promises – it does not seem likely that the historic investment deficit in the Euroregion will be eliminated soon.

Thus, it seems that the only solution to reach the appropriate level of infrastructure endowment is to make the user pay a substantial part of the cost. In this case, to avoid comparative grievances, there must be a fair and proper allocation of the publicly financed component, based on clear and consistent criteria; and also, the charges for users must be based on universal criteria – that is, everyone must pay a similar amount for the service they are offered. This means that it is inconsistent to make users pay for a motorway under concession while users of a parallel motorway or dual carriageway pay nothing. If – as is often the case – the service offered by the dual carriageway is inferior, the toll should be lower, too. This is an argument for economic coherence that is difficult to implement at the moment, but it would already be technically possible if we

applied the information and communications technology available.

In any case, both the selection of which infrastructures should be built and their method of funding must obey the principles of efficient management of society's resources. Therefore, decision-making should be guided by suitable socio-economic analysis, including a proper assessment of external effects, especially the environmental impact of the project. Whatever people may think about the importance of these effects, it is clear that they have acquired great relevance in our society and are capable of mobilising a substantial number of citizens.

It is in relation to the need to optimise the use of public resources that the option of private financing of infrastructure should be considered systematically, not just in terms of adequate management of public finances, but because it will lead to much more efficient construction and exploitation of the project. Public-private partnerships (or PPPs) allow us to find suitable solutions for complex operations, because the traditional relationship between the concession authority and the concession holder becomes more equal, a partnership, in search of an efficient and fair distribution of the risks between the public and the private partners.

The worldwide interest in these operations is obvious simply looking at the tremendous growth in infrastructure investment funds in recent years.¹⁰ The current situation has slowed this expansion, but we can expect that the reasons that initiated it, in particular the search for safer and longer-term investments, even if they have more modest returns, which are ideal for institutional investors such as pension funds or insurers, can only be reinforced by the financial crisis.

In short, given that there is little hope that the states will invest in the Euram at the level it deserves, and in order to move towards a more efficient system, we must propose transport infrastructures that are suited to the establishment of PPPs. This will increase the efficiency in the use of resources and limit the investment burden on public budgets. This is not really a specific issue for the Euroregion; but the experience accumulated over many years, since the first Spanish toll motorways, is a particularly good basis for innovation in this area, especially with regard to operations involving more than one Autonomous Community in Spain, as they are deemed to involve also the Spanish State. PPPs involving several administrations should not be limited to linear infrastructure; they could also be designed for maritime (essentially, short sea shipping) and air transport infrastructure and services.

10. According to TAYLOR-DE JONGH, *Infrastructure Funds: Trends and Opportunities*, Washington DC, July 2009, at the end of 2008, there were 72 funds of this type on the market, which intended to invest more than 90 billion dollars in infrastructure projects, which represented a growth of 80% in relation to the end of 2007.

6. CONCLUSION

What we have just said shows that the strong economic, social and cultural relations in the Euram justify that transport infrastructure be approached from a new angle; a perspective that frees it from the centralising actions that have framed its development over the past centuries, and, scandalously, in democratic Spain over the last fifteen years. This new approach represents a great challenge, which can only be met with an integrated response from all key stakeholders and focused on the future. This future involves the conversion of the Euram into the great Mediterranean logistic gateway for the European Union. To do this, and to maintain its place as a major pole of tourist attraction for the world, it is essential that the transport system – and, therefore, the infrastructure that supports it – be capable of responding effectively to a growing and changing demand. This infrastructure can only allow efficient and sustainable transport if we take advantage of the benefits of multimodality. And they can only make the qualitative leap in terms of cost, reliability and flexibility if they embrace innovation; a leap which would give the Euram the competitive edge to challenge other regions that have positioned themselves as gateways to Europe for many years.

It is clear that a commitment to logistics and to tourism has some implications for the quality of life of the Euram's citizens, as indeed is the case with all economic activities, although these two sectors, with their stronger transport component, represent a relatively heavier burden. Land occupation and some additional environmental impacts are their more apparent aspects. But we must also see that they increase the competitive advantages of some sectors in which the Euram is well placed within the global market. Logistics favours export industries. Tourism combines well with some social and health services...

All this calls for some investment in infrastructure – as we have seen – but these investments must be well studied, so that they provide the complements required by the Euram transport system. This system should be planned and programmed from a multimodal perspective, pursuing maximum efficiency and responding to the social and environmental objectives proposed for the whole of the Euroregion. Obviously, all envisaged actions must be framed within a realistic and balanced context, suited to the availability of funds and ensuring the financial sustainability of the system by using, in particular, the options opened by the new models of public-private partnership.