

# THE REGIONAL AEROSPACE CLUSTER POLICY IN EUROPE

**Thilo Schönfeld\* and François Jouailler\***  
**\*both Aerospace Valley, Toulouse, France**

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## Abstract

*European competitiveness is essentially driven by dynamic industry and technology-based clusters. In fact, globalisation on the one hand has strengthened the role of regional clusters on the other hand. As a result along with increasing market globalisation, increasing resources will flow to the more attractive regions, reinforcing the role of clusters and driving regional specialisation. These clusters enable companies, research organisations and regions to join forces for their mutual development and innovation. In a steady process European clusters are seeking to improve and strengthen their performance and innovativeness.*

*The present paper presents the regional cluster policy currently applied throughout Europe (and worldwide) to the aerospace sector. Although this paper mainly focuses on the activities of the French competitiveness cluster “Aerospace Valley”, perspectives on the future evolution in the context of European and international collaborations are provided.*

## 1 Introduction

In application of Michael Porter’s definition of clusters as “geographically proximate groups of interconnected companies and associated institutions in a particular field, linked by commonalities and complementarities” [1] the European Council, held in Lisbon in 2000, set the ambitious goal to make Europe “the world’s most competitive and dynamic knowledge based economy”. Since then multiple incentive policies were gradually established throughout Europe, in order to encourage the emergence or

development of these “clusters”. According to Christian Ketels of Harvard Business School [2,3], *clusters can only play this role, because the institutions in a particular cluster share four critical characteristics:*

- *Proximity*; they need to be sufficiently close in space to allow any positive spill-overs and the sharing of common resources to occur
- *Linkages*; their activities need to share a common goal, for example, final market demand, for them to be able to profit from proximity and interaction
- *Interactions*; being close and working on related issues is not enough – for positive cluster effects to occur some level of active interaction has to be present
- *Critical mass*; finally, there needs to be sufficient number of participants present for the interactions to have a meaningful impact on companies’ performance.

The synergy between these components is considered as the key to actual and future world competitiveness and is at its highest in localised innovation crucibles [2]. Clusters are considered as drivers in today’s knowledge society comprising networks of interdependent companies, knowledge-producing institutions or customers, all (ideally) linked through complex value-added chains.

## 2 The French Regional Cluster Policy

Based on these statements, after several economic studies and analysis conducted mainly in Europe and Asia, the French government has established a national policy of regional competitiveness clusters (“pôles de compétitivité”) to stimulate innovation and cooperation between industry, research and

education [4]. These competitiveness clusters are a forum for the creation of collective projects between companies, research centres and academic institutions. R&D projects are the cluster's core activity and constitute the main factor of their competitiveness while non-R&D projects (training, property investments, ICT infrastructures, monitoring economic developments, promoting local areas, international expansion, etc.) also make key contributions to the competitiveness of the cluster's companies and the regional economic development.

Following a first competitive "top-down" call for projects published in 2004, along with 66 other clusters covering most of the industrial sectors and economical tissues in France, in July 2005 the cluster "Aerospace Valley", devoted to aeronautics, space and embedded systems, has received approval [5]. Along with 6 other clusters in different sectors (ICT, etc.) Aerospace Valley was designated as « world class » cluster.

With the headquarter being located in Toulouse, the geographical perimeter of Aerospace Valley covers the two adjacent regions Midi-Pyrenees and Aquitaine, in the South-West of France (see



map). Midi-Pyrénées, around its economical capital Toulouse, is the largest Region in France by its size and has a total of 2.8 million habitants while the Aquitaine Region, around its capital Bordeaux, is the third largest by its size

and ranks 6<sup>th</sup> by its population (3 million). Quality of life and economical attractiveness are high in both regions which translate e.g. for Midi-Pyrénées Region by a positive migratory flow rate of 25000 to 30000 new inhabitants each year since 1999. Beyond their geographic proximity, these two complementary regions, by combining their strengths, constitute one of the leading European centers for space and aeronautics activities and in the field of onboard systems. By harnessing all sources of energy – major groups, small and medium sized enterprises, public and private research centres, universities, graduate schools of aerospace engineering and regional authorities, the cluster represents 94,000 jobs and sets ambitious

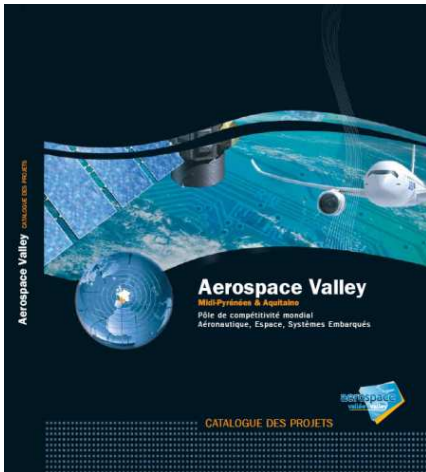


objectives for the upcoming two decades.

The core activities of Aerospace Valley center on technical activities which are specified into the following 9 core R&D sectors:

1. Aero-mechanics, materials, structures
2. Energy, propulsion, engines, environment
3. Air transport safety and security
4. Living Earth and space
5. Navigation, positioning, telecommunication
6. Embedded systems
7. Architecture and integration
8. Maintenance, services, training
9. Access to spatial and orbital infrastructures

Each of these 9 strategic activity domains is led by research engineers from both industry and academia. One of their main objectives is the elaboration of joint R&D projects. Today (June 2008) nearly 150 of these collaborative research projects have received Aerospace Valley approval, 110 of them are currently running and financed through various private and public



funding mechanisms. The total, accumulated amount of external funding received for these projects sums-up at 174 M€. In May 2008 the first directory of

these projects has been published and is available upon request.

Beyond these collaborative research projects, this impressive document includes also the so-called “structuring projects”. These “non-R&D” projects aim at efficiently structuring activities related to the territorial (infrastructure), economic and training & research development of the Aerospace Valley territory. Today 28 projects have received such approval.

Like most countries that (historically) possess a strong aerospace industry, the French assets are not spread all over the country but rather concentrated to a limited number of regions. For the aerospace sector these are located mainly in the South-West of France, in Ile de France around Paris and in the South-East. Thus, for the sake of completeness, in 2007 two additional clusters dedicated to the aerospace sector have been approved in France: ASTech in Ile de France and PEGASE in the Provence-Alpes Côte d’Azur Region around Marseille.

These two new clusters have set up strong links under the guidance of Aerospace Valley, to guarantee the most efficient use of private and public resources at the national scale. As an example periodic reviews and evaluations of the

R&D projects are conducted, while best practices are shared and international initiatives coordinated. One should keep in mind that clusters, with regard to the French policy, are essentially networks with limited permanent staff and should remain so. Thus a close connection between them is highly beneficial.

### 3 European Context

#### 3.1 European Commission initiatives



The air transport offers a massive contribution to the prosperity of Europe, both in terms of a globally competitive manufacturing sector providing goods and services, but also in terms of promoting the effective transfer of people and goods within Europe and worldwide. The industry is forecast to grow in importance. Employment related to this industrial sector (comprising manufacturing and the operational aspects of airlines, airports, air traffic control, policy and regulation) is presently 3 million in Europe and estimated to grow to 5-7 million by 2020 [source AirTN, <http://www.airtn.eu/>].

Achieving these objectives in aeronautics in terms of growth, in terms of global competitiveness and in terms of sustainable development heavily depends upon major aeronautical research and technological advances in the medium to long-term. The peculiarities of the aeronautical business, highly innovative while subject to long economical cycles, render the European SMEs of this sector particularly fragile. These must constantly invest heavily in R&D at own risk, in spite of a long term return on investment, in order to remain on the leading edge in a worldwide competition.

Most European countries, aware of this threat, have defined a regional cluster policy with the creation of research-driven clusters on their territory, gathering industry and SMEs, research and academic institutions, and local authorities. The purpose is to establish efficient links between these actors in order, in particular, i) to ensure that the R&D funds are directed to the appropriate needs, ii) to facilitate the access of

SMEs to the results of the R&D developed by the public and private institutes.

In recent years, European and national policy measures have increasingly targeted innovative industry clusters. At the level of the European Commission, several incentives - all aiming at supporting these regional cluster initiatives - have been established during the past years in order to encourage national and regional governments to develop regional clusters:

1. Europe INNOVA, managed by DG Enterprise & Industry, provides industrial clusters with a learning platform to enable them to identify, analyse and share good practice in cluster management, in order to seize opportunities and address the challenges emerging from the globalised environment (<http://www.europe-innova.org>). The establishment of these Europe INNOVA Cluster Networks aims at fostering the development of successful clusters and informing policy with regard to targeted actions for the future.
 
2. PRO-INNO Europe is a second initiative of DG Enterprise & Industry. It aims to become the focal point for innovation policy analysis, learning and development in Europe, with the view to learning from the best and contributing to the development of new and better innovation policies in Europe (<http://www.proinno-europe.eu>).
 

While the Europe INNOVA initiative is primarily target towards the industrial sector with critical size, PRO-INNO Europe aims at stimulating trans-European cooperation between national and regional innovation programmes. This initiative is particular addressed to regional and local authorities such as clusters.

The “policy development line of PRO-INNO includes INNO-Nets which focus on cluster policy cooperation, support to knowledge-based

SMEs and start-ups, transnational knowledge valorisation, the links of industry and research was well as innovation in services. One of the four INNO-Nets is the project CLUNET with several aerospace clusters involved. CLUNET aims to share experiences and implement concrete pilot projects regarding cluster innovation and development policies. Examples of themes include the internationalisation of SMEs, mentoring activities, cluster mutual learning and the establishment of common strategies and funding.

### 3.2 European cluster observatory

Not limited to the aerospace sector, a European cluster observatory has been created in order to *inform policymakers, cluster practitioners and researchers, throughout the world, about European clusters and cluster policies* (<http://www.clusterobservatory.eu/>) [6]. This observatory offers data on geographical patterns of specialisation across cluster categories, national and regional portfolios of clusters, cluster organisations, and national and regional policies and programs related to innovation and clusters.

The Observatory covers all EU-27 countries plus Iceland, Norway, Switzerland, Turkey and Israel with an important data base of regional clusters based on 38 cluster categories in 259 European geographical regions.

### 3.3 European cluster memorandum

A European Conference on Innovation and Clusters was held in Stockholm in January 2008. The Conference was part of the activities undertaken under the PRO INNO Europe initiative (cf. above). An important input to the event was the *European Cluster Memorandum* [7] previously prepared in 2007 by a High Level Advisory Group of experts on clusters established by the European Commission. The Memorandum seeks a strong commitment from public stakeholders at all levels to further support cluster development in their respective territories.

It was recognized that clusters are “important drivers of innovation and contribute to the competitiveness and sustainable development of European industry and services”. It was postulated that “strong clusters emerge and flourish best in open markets where “coopetition” (i.e. a blend of cooperation and competition) exists within and between clusters” [7].

Finally, the European Commission was encouraged to further develop policy actions along the orientations proposed by the European Cluster Memorandum and to put forward a European Cluster strategy and action plan to the Council and the European Parliament.

globalisation, in the interest of the major aeronautics programmes and the regional development. Such a European network will include suggestions elaborating a common strategic vision for developing policy recommendations for cluster-driven policies to enhance competitiveness in Europe.

With this objective to launch joint R&D projects in the frame of a strategic collaboration with European clusters, the “Wings-for-Region” network has been initiated. The non-exhaustive list of present contacts comprises clusters in Belgium (Skywin Wallonia), Germany (Hamburg Aviation Cluster), Poland (Aviation Valley), Spain (HEGAN Basque Country) and in the United Kingdom (Farnborough Aerospace Consortium, WEAFA South-West England) while outside Europe, a close collaboration has been established with the AéroMontréal, the aerospace cluster established in the Greater Montreal area in Canada. One concrete action resulting from this network was the submission of a joint research project on “low cost tooling for composites” in the frame of the second aeronautics call of the 7<sup>th</sup> EC Framework Programme. In order to foster their cooperation, “Wings-for-Regions” partners intend preparing and submitting a joint proposal to of the upcoming CIP calls in the frame of the Europe-INNOVA programme.

Such, more or less informal, networks as “Wings-for-Regions” offer a framework for investigating new approaches in the promotion of innovation and R&D activities or for comparing novel tools for cluster management. The clusters of the “Wings-for-Regions” consortium indeed are very heterogeneous in terms of size, governance, degree of industry implication, implementation of innovation strategies and RDT policies, etc. Some clusters are very much guided by a regional government and act more or less like a regional development agency, some others are very much business oriented especially for their SME members to find new market opportunities worldwide. Here, the different cluster portfolios applied in each country and the degree of political (and financial) autonomy of each Region versus the



### 3.4 The “Wings-for-Regions” initiative

Aerospace Valley, in its role as the leading French aerospace cluster, is at the origin of the creation of a European-wide network called “Wings-for-Regions” between research-orientated regional clusters mainly in the field of aeronautics [8]. The main objective is to optimise the regional investment strategies in innovation and R&D towards SMEs in order to prepare them to the challenges of the

national government represents an important parameter.

The French clusters are generally considered as situated in an intermediate position with a strong emphasis on technology. Presently, a second focus is on R&D activities and the elaboration of collaborative research projects.

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