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SAGE

Safe and Green Road Vehicles Europe

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1. Executive Summary

The inventory report aims at providing knowledge about the competences and ability of the actors that each SAGE cluster 'contains' or 'represent'. The objective is to give a background description of the general innovation system in automotive sector of each region and show the capacity and innovation potential of the clusters with respect to the specific knowledge and development focus of SAGE.

The inventory study has been focused on the four main regions/clusters of SAGE: Western Sweden region (VGR or Västra Götaland Region), Mov'eo (Paris region and Upper Normandie), Regensburg cluster and Piedmont region. A preliminary inventory study has also been carried out for Warsaw Region, the focus region for mentoring activities in SAGE but the results from this study are not included in this report.

1.1. The SAGE clusters

The Western Sweden cluster, represented by a the regional authority (the region of Västra Götaland), the Chalmers University of Technology and a major vehicle manufacturer (Volvo) company, is characterised by a highly focussed regional policy aiming towards development of industrial competitiveness. The research and innovation activities are implemented mainly through thematic competence centres with high involvement from major industrial stakeholders. The large OEMs in the region are Volvo Cars Corporations and organisations within AB Volvo, such as Volvo Buses Corporation, Volvo Group Trucks and Advanced Technology & Research (within Trucks). Research-driven or research-intensive suppliers and SMEs are few in number and are mostly small. Several existing engineering consultancy firms have development engineering competences in the studied areas, and new firms will likely develop in this area. The SMEs relevant to SAGE primarily consist of small firms within emerging ecosystems for e-mobility, biofuels and transport efficiency. The regional level of innovation 'management' has primarily aimed to initiate and support innovation milieus and platforms for cluster development by using a network of existing constellations of actors.

The French cluster is represented by Mov'eo pôle de compétitivité, a single legal entity with a broad representation from authorities, industry and research organisations. As such, they bring in particular experiences in cluster development activities, decision making procedures, etc. The cluster forecasts developments in clean technologies, low CO2 vehicles, safe and connected vehicles, new mobility solutions. Its collaborative projects focus on seven Strategic Activity Domains: Intelligent Mobility Solutions; Road Users Safety; Demonstration and Low CO2 Vehicles; Vehicles Environmental Footprint; Energy Storage Systems; Mechatronics Systems; ICE Powertrains.

A third cluser variety is represented by the Regensburg cluster, represented in SAGE by the City of Regensburg, the Regensburg University of Applied Sciences, and Continental Automotive GmbH, a major automotive supplier. It is a cluster of suppliers and providers mainly focused on electromobility (with specific competences on ICT technologies), where the activities are characterised by the strong presence of several large company headquarters and a broad base of SMEs.

In Piedmont, the cluster is represented by the regional authority (Piedmont Region), Politecnico di Torino and Fiat Research Center.The cluster is characterized by a distinctive feature: the entire planning and production cycle is all concentrated in the same area (particularly, in the Torino area) and the region's know-how encompasses all automotive sectors: cars, light and heavy commercial vehicles, buses, earthmoving machines.

The ecosystem is centred on the extended university campus of Politecnico where an open innovation centre integrating research, education and innovation has been developed (the Cittadella Politecnica).

1.2. National and regional public mesures for the development of the regional innovation system

National agencies have a central role in developing policy and funding for the Road Transport sector both in Sweden and France. Their aim is to promote innovation systems (VINNOVA and Agency for Economic and Regional Growth in Sweden; OSEO in France with special focus on SMEs) as well as R&D and education in different focus areas (Energy, Environment and Transport sectors).

In Western Sweden, Region Västra Götaland mainly supports cluster initiatives and collaborative project activities within the cluster initiatives (also organising public–private collaboration and co-funding parts of the R&D spectrum for which further technology development and implementation require that testing is conducted in real-world situations). In Western Sweden the main measure to support cluster was represented by the 3-year regional programme “InMotion” (Collaborative actions for environment, energy and sustainable transport) launched in 2009. Its focus was initially the automotive and transport industry, but this focus gradually shifted to include energy and cleantech. R&D basically occurs as applied research or advanced engineering in cooperation between university and industry.

In Paris Region and Upper Normandie, Regional Councils are putting forward solutions to promote economic development, support companies, bring together stakeholders involved in R&I, provide grants for research and innovation, as well as to innovate training. R&D investments come from both public and private sectors. In the Paris and Upper Normandy regions the Competitiveness Clusters programme started in 2005 with the aim of developing competitiveness clusters. The selected projects cover both emerging technological fields such as nanotechnology, biotechnology and microelectronics and existing areas such as the automotive and aerospace industries.

In Germany, the innovation-related framework conditions and the strategic vision for R&D for the whole country is responsibility of the Federal Government, which also provides the bulk of funding for public research organizations, large research centers and programs aiming at supporting industry-academia linkages. The 16 Laender governments can use their regional capabilities in support of R&I in the same technology context of the federal government, but with differences in emphasis. A set of specialized public, semi-public or private independent institutions (called Projekttraeger) administrates the programmes and is also involved in their design. Administrative regions, cities and city agencies are the other key-actors to back initiatives aiming at promoting R&D supporting measures. In Bavaria region, the main national program related to cluster promotion is “Top Cluster Competition”, which aims at supporting projects (R&D, demonstrators, development of new forms of co-operation, training and promotion of young talent) performed by cluster members. The two regional programs “Bavarian Cluster Alliance” and “Cluster Automotive” support the building up of cluster platforms in Bavaria.

In Italy, the strategic vision for R&D for the whole country is responsibility of the Government, which also promote the main national R&D programs (PRIN, FIRB, INDUSTRIA2015) to provide co-funding for public research organizations, large research centers and programs aiming at supporting industry-academia linkages. The National Cluster Programme, launched in late 2012, aims at establishing and developing national

technological clusters in specific areas, including Means and Systems for Terrestrial and Marine Mobility, Energy and Smart Manufacturing. In Torino area, the Piedmont Regional Goverment can issue its own Research and Innovation Programs to provide clear targeted priorities to R&D and innovation, as well funds to support the deplopment of the new Education-Research-Innovation Process, including technology development and demonstrations. These Programs are also intended to stimulate innovative contributions from the national industry. The main regional measures to support clusters in Piedmont are the Technology Platforms and the Innovation Clusters.

1.3. Capacity of the SAGE clusters

Western Sweden, Ile-de-France, Upper Normandie and Piedmont host the headquarters, plants, engineering and production centres of worldwide vehiclemanufactures. The presence of leading automotive suppliers, public research centres and universities is also significant, whereas professional organizations and SMEs complete the global picture of the cluster ecosystem. For these regions the inventory shows a strong and broad commitment in technology sectors related to Green and Safe technologies. The City of Regensburg cluster revealed to be a distinct cluster of suppliers and providers mainly focused on electromobility (with specific competences on ICT technologies), which is complementar with respect to the other SAGE clusters.

As far as the Green technology sector is concerned, SAGE regions basically address all the topics realated to New Powertrain Technologies, Vehicle electrification and rational use of energy in mobility and transport systems.
Western Sweden and Piedmont have a strong and long-term commitment in bioethanol, biogas and alternative gaseous fuel production (Green area), including significant investments to promote the related infrastructures and demonstration in public transport. In Germany, a national supporting programme is focused on hydrogen infrastructures and fuel cell technologies.
The sector Green Production is mainly addressed in Piedmont (with two Innovation Clusters: Innovation in New Materials and Mechatronics and Advanced Manufacturing), Mov'eo and Western Sweden.
Other broad cluster Green competences are related to the Mechtronic technology area and are mainly present in Mov'eo (Strategic topic Mechatronics Systems DAS-SME) and in Piedmont (again the Mechatronics and Advanced Manufacturing innovation cluster). With reference to the automotive field, these cluster initiatives focus on subsectors as energy harvesting and recovering systems and robustness and reliability of mechatronic systems.

In Western Sweden the safety area is well mature and embedded in the automotive cluster. Safety is also important for Mov'eo and Torino cluster. However, Mov'eo has consolidated cluster initiatives in this area, whereas Piedomnt cluster R&D in this area has been developing by means of joint participation of groups of cluster stakeholders to national or EU projects. As far as Regensburg cluster is concerned, it covers the aspects of safety with special focus on ICT in electric vehicles.

Even though the focus of this report was on Green and Safe technologies, the SAGE partners have also recognized the importance of two additional focus areas: Connectivity and New Business Model and Mobility Services. The Connectivity area includes the enabling technologies aimed at achieving new products and new services that can make vehicles more safe and environmentally friendly. The New Business Model and Mobiity Service area deals with future mobility solutions, focusing not primarily on the vehicle but on the measures

that can be proposed at the level of transport system and that can also have implications at vehicle level. All SAGE clusters have clear and strong competences in these areas.

2. Introduction

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The inventory study has been focused on the four main regions/clusters of SAGE: Western Sweden region (VGR or Västra Götaland Region), Mov'eo (Paris region and Upper Normandie), Regensburg cluster and Piedmont region. A preliminary inventory study has also been carried out for Warsaw Region, the focus region for mentoring activities in SAGE but the results from this study are not included in this report.

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This report is structured as follows. Chapters 3 and 4 give some operational definitions about clusters and introduce the methodology used to carry out the regional inventory phases. A description of the regional environments is then given in Chapter 5. Chapters 6 and 7 focus on the ecosystem of the clusters, introducing the national, regional and local public authorities and the main industry and academiaactors in the regional automotive sectors. Chapters 8 summarizes the main public policies in the SAGE regions that can have an impact on the development of the automotive sector, whereas Chapter 9 analyses the relevant initiatives related to the automotive sector started in each cluster. These actions include cluster initiatives, research centres and strategic working groups that review and improve the key topics relevant for the clusters as well as

the main collaboration platforms and cross-cutting projects in SAGE regions that can produce new initiatives in specific technology areas.

3. Cluster Theory: Operational Definitions

Introduction

Clusters are increasingly understood as local nodes for global knowledge flows, widely recognised as 'innovative hot spots'. The Innobarometer 2006 on "cluster's role in facilitating innovation in Europe" confirmed that companies situated in clusters are more innovative and finally more competitive than companies outside the clusters.

'Cluster initiatives' and 'Cluster organisations' are fundamental instruments of regional innovation policies.

There is an ongoing debate on what constitutes a cluster, both among academics and among policymakers, and there are multiple perceptions of kinds or categories of clusters. The multi-faceted nature of the concept may reflect the appropriateness of varying applications depending on the specific context.

Even though a discussion about the definition of 'cluster' is not one of the goals of SAGE project, operational definitions are needed. This section focuses on a number of elements that are central to the cluster concept and that, for convenience, are adopted in this report as the SAGE basic notion of what comprises a cluster.

Cluster Definition

Clustering is generally defined as a process of firms and other actors co-locating within a concentrated geographical area, cooperating around a certain functional niche, and establishing close linkages and working alliances to improve their collective competitiveness (Andersson et al, 2004).

The most widely used definition of cluster is that of Porter (1998). He defines clusters as:

- geographical concentrations
- of interconnected companies, specialised suppliers, service providers, firms in related industries and associated institutions (e.g. universities, standards agencies, trade associations);
- in a particular field
- that compete but also co-operate.

The 'Cluster Initiative Greenbook' (Sölvell et al. 2003) argues that Financial institutions are also vital and normally present in a cluster (and active in a cluster initiative). Other key elements of the cluster approach are pinpointed by Andersson et al. (2004):

- Critical mass: is required to achieve inner dynamics;
- The cluster life cycle: clusters (and the related cluster initiatives, defined later) are not temporary short-term phenomena, but are ongoing with long-term perspectives
- Innovation: firms and actors in clusters are involved in processes of technological, commercial and/or organisational change.

Though, there is no general agreement on the fact that these key elements are neither necessary nor sufficient to put boundaries to the cluster concept.

Geographical concentrations and the specialisation of the businesses in a particular thematic field (specific value chains mostly spanning across several industries) are at the heart of the cluster approach. Agglomerations of related industrial activities were first explained in the late 19th century under the heading of "industrial districts" and with reference to so-called Marshalian externalities (Marshal, 1890). This framework established a link between co-location by firms and economic efficiency as firms would cluster in order to benefit from positive externalities associated with their respective activities.

However, innovation is deemed greatly important for generating the potential benefits of clusters (Andersson et al., 2004). "Innovative clusters" are critically powered by three driving forces:

- New firm creation and technological diversification;
- Inter-actor network creation
- Cluster formation.

An important source of innovation and future competitiveness can be obtained by clustering across traditional sectoral boundaries, i.e. a cluster may go beyond relations within a specific sector, or those that develop along an individual value-added chain. It may span numerous sectors, branches and industries. In fact, today sectoral boundaries are in many cases obsolete as intensive inter-linkages may need to reach into all sorts of fields. Automotive sector can be one of this cases, and the required fields also include mobility services, energy and resources, societal aspects. However, effective clustering is likely to entail a strong element of complementary specialisation between actors, each focusing on core business coupled with linkages and the capturing of synergies in learning processes engaging multiple organisations (Audretsch, 1995; Dunning, 2000a).

Even though geographical concentration has been central to the cluster idea from the outset, "Localized clusters" seldom constitute comprehensive clusters and often have links with actors outside the region (Malmberg et al., 1996). Multinational enterprises have in many cases transferred skills and technologies that have been decisive for the development of local clusters (Dunning, 2000b). Other mechanisms for sourcing may also play a critical role for accessing state-of-the art knowledge. According to Larsson (1998), firms with geographically extended patterns of technological collaboration are the most innovative. As markets are global but the labour force normally local, clusters can be conceived of as 'local nodes' in global networks (Maskell and Malmberg, 1999). Different clusters can be connected in a global value chain. For instance, an automotive network may have multiple interrelated nodes specialised in different parts of the value chain. The hierarchy is not necessarily strict and there might be links leaping in various directions.

The linkages and interrelationships of cluster actors in the triple helix (of business – academia – public administration) as key elements of the cluster approach show the proximity to the network concept and the concept of innovation systems (cf. European Commission 2002).

The **network concept** is often introduced to characterise the specific forms of governance based on social relations, trust and the sharing of complementary resources that typifies many regional clusters (Vatne and Taylor, 2000). Social relations are seen as the most important channels through which information flows, and geographical proximity facilitates the formation of trustful social networks.

The **regional innovation system** can represents a broader framework than cluster. Its core is made up by three sub-systems embedded in a common regional socioeconomic and cultural setting:

- industrial system responsible for knowledge application and exploitation
- education and research system responsible for knowledge generation and diffusion
- political system influencing and governing other sub-systems and elements.

While a cluster is a sectorally delimited phenomenon consisting of co-located and interconnected actors in a particular field, the regional innovation system span across several sectors in the economy and serves a a framework for the creation of capabilities for firms in a variety of sectors.

Reaserch-driven Clusters

Research-driven clusters are strongly influenced by research, technological development and innovation (RTDI) and thus depend on effective knowledge flows and science-industry collaboration facilitating specific learning processes and innovation activities (Clar et al., 2008).

Research driven clusters often compete and co-operate with each other on a global scale. These clusters can be seen as local nodes for global knowledge flows in international value chains and innovation networks, and hence are widely recognized as 'innovative hot spots' leading to competitiveness and prosperity for regional and national economies (Nauwelaers 2003).

In research-based clusters, specific organisations such as well-known public or private research organisations (e.g. laboratories of multinational companies), play a vital role as 'knowledge hubs' and intermediaries (Cooke 2005) between global and regional innovation networks. In this respect, multinational companies are well integrated in international innovation networks and thus could play – if they are embedded within the cluster – the important role of knowledge providers within clusters, transmitting internal knowledge and receiving external knowledge. This can be vital for the regional deployment and exploitation of international knowledge.

Cluster Inititiatives and Cluster Organization

'Cluster initiatives' are viewed as (Andersson et al., 2004) conscious actions taken by various actors to create or strengthen clusters. Sölvell et al. (2003 and 2009) define cluster initiatives as:

- organised and systematic efforts involving geographical proximity, capability of self-evaluation, communication between actors and a degree of governance and concerted action between actors,
- to increase growth and competitiveness of clusters within a region or change the development path of an existing cluster,
- involving the three 'triple-helix' groups of the cluster (firms, government and the research community/academia).

Institutions for Collaboration (IFCs, defined as formal or informal actors which promote interest in the cluster initiative among the actors involved) and Financial institutions are also of importance for cluster initiatives (Porter and Emmons, 2003; Andersson et al., 2004). The role of an IFC may vary considerably. IFCs may promote cluster initiatives not only internally but also externally and perform a series of cluster actions. It may serve to establish a completely novel set-up and engage numerous organisations, but it may also represent a set of already established actors, such as chambers of commerce, industry associations, professional associations, trade unions, technology transfer organisations, quality centres, think tanks, university alumni associations, and others (Porter and Emmons, 2003). Financial actors (banks, insurance companies, public pension funds, investment funds, business angels, venture capitalists, etc.,) are not likely to launch a cluster

initiative, since it does not fit within their natural agenda, but the competencies they hold are of great use to the clustering process, notably in supporting the inner dynamics of the cluster.

Leadership by individuals is also important in cluster initiatives. For successful clustering, these individuals may, however, need to combine multiple competencies, such as being visionary, facilitative, analytical and excelling in networking. A cluster entrepreneur, or clusterpreneur, typically needs to encourage synergies and build consensus, maintain the balance of achieving short vs. long-term benefits and focus on concrete action plans for specific cluster initiatives. Another role filled by the clusterpreneur is that of cluster engineer. This individual takes on the role of broker – coupling firms with firms, firms with universities, government agencies with cluster initiative members on a continuous basis. The qualities of the individual clusterpreneur, including his/her inherent competencies, can crucially influence the success of the cluster initiative. Clusters are, like individuals, unique, in part because they build on and extend from the particularities and skills of the people that they bring together.

A growing number of hybrid organisations are today active in cluster initiatives. Hybrid organisations include incubators (university-industry hybrid), trade associations or chambers of commerce (government-industry hybrid), and various sorts of government councils e.g. research/science, innovation, etc. (comprised of representatives from all three elements of the triple helix). This group of actors can make contributions in linking and helping to integrate the roles and functions of others.

The term '**cluster organisation**' can be applied to identify the dedicated organisational form that drives or promotes the cluster initiative. A 'cluster initiative' can, but need not, have organisational form and be a formal 'cluster organisation'. The 'cluster initiative' and 'cluster organisation' usually represents a small (but sometimes crucial) part of the real cluster, with which the initiative and organisation aims to interact.

Sölvell et al. (2003) distinguished between six categories of objectives for innovative cluster initiatives: (i) cluster expansion; (ii) innovation and technology; (iii) education and training; (iv) commercial cooperation; (v) policy action; and (vi) research and networking.

A cluster initiative can be initiated by any of the triple-helix partners, or jointly between partners. It can be funded by public programme, private funds, membership fees, and it can be organised in different ways. However, 'cluster initiatives' are typically publicly initiated and funded policies for research, innovation and collaboration in dedicated technology areas, funded as a project, programme or in other ways. Its resource base may vary and the cluster concept does not prescribe any particular form for this. Although most cluster initiatives are dependent on public funding, and frail without it, a private sector lead may be crucial for effectiveness and performance (Porter, 2001). Where private actors acquire control, the orientation of initiatives tends to be different, e.g., driven more by concerns for productivity and profitability and with greater scope for innovation and expansion. The competencies of "academia" put universities and public labs/research institutes in a position to take on supporting roles throughout the clustering process (Andersson et al., 2004): facilitating trust and building social capital; anchoring the cluster initiative's strategic direction and actions with proof and analysis; and driving actions (especially in the areas of innovation and network creation). Academia can also play a role in the continuous evaluation of objectives and actions, including by challenging the chosen path by re-examining the cluster initiative's direction, actions and results with frequent intervals.

Public cluster initiatives tend to include the attraction of Foreign Direct Investment (Andersson et al., 2004) as a priority instrument to strengthen the resource base, access front-edge technologies and skills. Common practices are to diffuse information about the locational advantages and partnerships that can be offered by existing clusters, often with some targeting towards foreign investors believed able to contribute assets that are complementary to local capabilities.

International organisations are unlikely to introduce cluster initiatives, but may play an important role (Andersson et al., 2004) as facilitators in situations where national governments are lacking resources, normally providing financial assistance along with assistance in technology diffusion and serving a brokering function (e.g., by creating platforms that can link public research actors with business and government).

Cluster Policies

Operational distinctions are needed between clusters, cluster initiatives and cluster policies. The concept of cluster policies is narrower than that of cluster initiatives as the latter include measures undertaken by various kinds of actors beyond the public sphere. On the other hand, the notion of cluster policies may comprise a range of measures and strategies normally not reckoned as “cluster initiatives”. Many actions taken by authorities influence clusters inadvertently, without an explicit purpose of that sort. In theory, cluster policies are pursued by public actors for the purpose of increasing socio-economic benefits through the creation or further development of clusters. Other policies impact on clusters indirectly, e.g., education systems, competition laws, public procurement practices, public funding of research and product development, IPRs, regulations influencing universities’ ability to form holding companies for the commercialisation of new ideas, and so on.

Cluster Types and Categorization

Working clusters (Enright, 2000) are those in which a critical mass of local knowledge, expertise, personnel, and resources create agglomeration economies. Working clusters tend to have dense patterns of interactions among local firms and complex patterns of competition and co-operation. Even if participants do not call themselves a "cluster" there tends to be knowledge of the interdependence of local competitors, suppliers, customers, and institutions.

Evolutionary ‘cluster’ (Sölvell, 2009): historical results representing industrial and academic proximity and interaction.

Latent clusters (Enright, 2000) have a critical mass of firms in related industries sufficient to reap the benefits of clustering but have not developed the level of interaction and information flows necessary to truly benefit from co-location. Such groups of firms do not think of themselves as a cluster and, as a result, do not think of exploring the potential benefits of closer relationships with other local organizations.

Potential clusters (Enright, 2000) are those that have some of the elements necessary for the development of successful clusters, but they must be deepened and broadened to benefit from agglomeration. Often there are important gaps in inputs, services, or information flows that support cluster development.

Policy driven clusters (Enright, 2000) are those chose by governments for support but lack a critical mass of firms or favourable conditions for organic development. Many electronics and biotechnology "clusters" found

in government programs are examples. They tend to rely on the notion that policy can create clusters from a relatively unfavourable base.

'Wishful thinking' clusters (Enright, 2000) are policy driven clusters that lack, not only a critical mass but any particular source of advantage than might promote organic development.

Another categorisation of cluster can be done *along the spatial/functional axis* (Andersson et al. 2004). The **industrial cluster** focuses on competitiveness within sectors. It is composed of all the actors, resources and activities that come together to develop, produce and market various types of goods and services. A critical mass in the value chain makes firms more competitive as they benefit from shared labour markets and other factor conditions. The industrial cluster is normally not spatially confined to an urban area. On the contrary, it rather tends to have a broader scope, possibly covering a state or a nation.

The **regional or localised cluster** is a spatial agglomeration of similar and related economic activity that forms the basis of a local milieu that may facilitate knowledge spill-over and stimulate various forms of learning and adaptation. These clusters commonly consist of SMEs, and the core of their success is centred on strengths in social capital and geographical proximity. Another feature is that firms in such settings are generally less directly inter-related than those in industrial clusters.

Clusters may also be differentiated according to the *degree of knowledge input*, which is connected to the idea of a high- and low-development road (Sengenberger and Pyke, 1991). However, with the distributed knowledge base of value chains (as mentioned above) and the extensive interface between industries, firms and clusters at very different levels of R&D intensity, technical levels are becoming less significant than the ability to interact and exchange knowledge. The **knowledge-based cluster** is spatially confined but, in comparison with the regional cluster, the focus is more on innovation and technical progress. Proximity may impact greatly on the creation, acquisition, accumulation, and utilisation of knowledge rooted in inter-firm networking, inter-personnel relationships, and local learning processes.

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4. Methodology

The methodology used is the one jointly agreed upon by the partners for the set-up and structure of their regional reports and reported in Deliverable D2-1.

The methodology consists in a Desktop Analysis and in an Automotive Audit, which are synthetically described in the following bulleted list along with the final outputs:

1) DESKTOP ANALYSIS.
   a) The tools are:
      i) Existing databases or information systems
      ii) Existing studies and reports
      iii) Surveys
   b) The outputs are:
      i) Stakeholder list with classification of key competences and interrelations
      ii) Cluster map
2) AUTOMOTIVE AUDIT
   a) The tools are:
      i) Semi-structured (Face to face or by the telephone) interviews
      ii) Regional workshops
   b) The outputs are:
      i) expectations and drivers of each actor in the regional triple helix
      ii) key market areas
      iii) on-going initiatives in the sector
      iv) internal factors of SWOT (strength and weakness)
3) FINAL OUTPUTS
   a) Regional Priority Area report at each node
   b) Final Report (this report)

Common templates for stakeholder list, interviews and regional priority area reports have been given. Each cluster has adapted the common methodology before applying it to the data collection and analysis activities required to produce their reports.

Western Sweden

1) Desktop analysis of prior studies and reports, which included major studies on the Swedish automotive sector that were produced in the region or by national agencies.
2) Quantitative analysis of the automotive sector through the analysis section at Region Västra Götaland jointly with the analysis department of the National Agency for Innovation Systems (VINNOVA). This analysis was based on data from Statistics Sweden (SCB). The statistical analysis that concerns academic competence was formulated in collaboration with the Transport Area of Advance at Chalmers University of Technology.
3) 16 semi-structured interviews were conducted with a selected group of 19 key actors using the common SAGE interview template. The regional SAGE-member group conducted the interviews, which were typically one to one-and-a-half hours long and were recorded or logged by taking notes.
4) One stakeholder workshop was conducted with the aim to discuss regional cluster initiatives and governance issues.

Regensburg

1) Existing studies and reports as e.g. the regional information system CORIS, developed from the University of Regensburg, statistical data from the City of Regensburg 2011, data from the Industrie und Handelskammer (IHK) Lower Bavaria and Upper Palatinate were used.
2) An online enterprise survey was conducted. Participants were all the 41 enterprises of the e-mobility cluster. With a return rate of 85% the survey gives an extensive basis of the key competences, expectations and various other company parameters.
3) Semi-structured interviews have been made by the City of Regensburg, Department of Economic Development. Six interviewshave been done by using an interview template, one interview was done by telephone. The interviews were typically 1 h long and were logged by taking notes.
4) An awareness workshop and a regional strategy workshop were performed. Objective of the awareness workshop was to inform the cluster members about the SAGE project, its objectives and opportunities. Target of the strategy workshop was to discuss the results of the regional report, perform the SWOT analysis and to define vision and milestones for the e-mobility cluster.

Mov'eo

1) Desktop analysis carried out according to the shared templates
2) 15 semi-structured interviews have been carried out
3) 9 awareness workshops

Piedmont

1) Desktop analysis carried out according to the shared templates
2) 15 semi-strucutred interviews have been carried out
3) 1 awareness workshop

5. The SAGE Clusters

5.1. The Regional environments

The regional territories of the four regions of SAGE (Western Sweden, East Bavaria, Paris region and Upper Normandie, Piedmont) have comparable surfaces, ranging from 20.000 km^2 of East Bavaria to about 25.400 km^2 of Piedmont. However, significant differences are apparent in terms of inhabitants and municipalities. Western Sweden is the least populated region, featuring 1,6 million of inhabitants distributed over 49 municipalities, whereas the French regions are the most populated with 13,5 million people on 2700 municipalities as shownin Table 5.a.

Nevertheless, 42.000 people in VGR are employed in automotive sector (2,6% of the inhabitants and 4% of the total working population) against the 180.000 direct jobs available in the French regions (1,3 % of the total population), the 46.000 of Piedmont (1% of inhabitants) and 25.000 of Regensburg (1% of inhabitants of the city and of the catch area).

Table 5.a: General Information on SAGE Regions

	VGR/Gothenburg	**East Bavaria/City of Regensburg**	**Mov'eo (Paris region and Seine Valley)**	**Piemonte/Torino**
Surface (km^2)	24.000	20.000 (28% of the Bavarian territory)	24.000 (Paris Region = 12.000 Upper Normandy = 12.000)	25,399
Inhabitants (million)	1,6 (1 in Gothenburg area)	2,3 (0,15 in Regensburg and 0,6 in Regensburg catchment area)	13, 5 (Paris Region = 11,7 Upper Normandy = 1,8)	4,457
Municipalities	49	16 administrative districts; 6 urban municipalities	2700 municipalities, 10 departments (Paris Region = 1300 cities Upper Normandy = 1400 cities)	1206; 8 urban municipalities
GRP (Gross Regional Product)	Rank: 34 among 300 EU regions	App. 75.000 Euro/inhabitant in Regensburg City	€602 billion in 2009 (Paris Region = €553 billion Upper Normandy = €49 billion)	0,1207 billion Euro (8% national GDP) in 2009
Unemployment rate	8,5%	3 % in Easter Bavaria (in 2011; 3,4% is the value for all Bavaria)	8,5%	7,6%

		2,8 % in Regensburg and district (in 2011)		
	VGR	**Regensburg**	**Mov'eo**	**Piemonte/Torino**
No. Companies	170 automotive companies	In Easter Bavaria: 445 automotive companies and institutions. E-mobility cluster: 41 S&T Enterprises (17 in automotive sector): 17 LE 7 ME 17 SE	Approximately 900.000 companies. 500 automotive industry related companies. (Paris Region = 400 Upper Normandy = 100)	469.340 (1.600 with more than 50 employees) 1.400 automotive related
No. Employees	42,000 people in VGR employed in automotive sector (4% total working population)	In Regensburg 142,000 jobs: 37% manufacturing sector; 41% service sector; 22% general trading; 11,000 in IT technologies; 25.000 jobs directly connected to the automotive sector	Approximately 6.000.000 employees In the automotive sector :180,000 jobs (60,000 direct jobs)	46,000 in the automotive sector
Universities	2 (in Gothenburg)	3	18 (Paris Region = 17 universities Upper Normandy = 1 University)	4
R&D vs. GDP	4,5 % (in Sweden)	N/A	3%	1,9%
private and public R&D	24 billion SEK (22% of national 112 billion SEK – 79 in industry;	N/A	Paris Region: €16.4 billion in 2008 (€15.8 billion in 2007):	78,6% private

	27 in university)		10,7 private 5,7 public	
	VGR	**Regensburg**	**Mov'eo**	**Piemonte/Torino**
People in R&D	N/A	App. 20.000	All the sectors = 150,300 Paris Region = 143,800 Upper Normandy = 6,500 Automotive= 18,500 (70% of automotive industry R&D in France) Paris Region = 17,500 Upper Normandy = 1,000	19,700

The Western Sweden apparently invests a more significant share of its GDP into R&D activities with respect to other SAGE regions (4,5% against the 3% of French regions and 1,9% of Piedmont). In turn, Paris Region has a number of people employed in R&D (143.800) which is 7 times higher than that of Piedmont region.

5.2. Western Sweden region

A large share of the Swedish automotive industry is located in the region of Västra Götaland, whereas national research policy and major innovation funding agencies originate from a national context. The state-governed system for a publicly funded R&D system and the large vehicle OEM industry have primary roles in advanced technical research and knowledge-intensive development in the region. Strategic 'regional' cluster development discussions in technical areas and among OEMs have occurred as governance processes with close links to the national system. More than 50 percent of Swedish R&D funding likely ends up in or passes through the automotive industry in the region. The region has the largest general export share in Sweden and is considered a research-intensive region. Private research is highly concentrated in a few large firms, and is represented in the vehicle sector by large OEMs. A strong concentration of these research activities also exists in the region within the local industry and through universities in the Gothenburg area (Chalmers University of Technology, University of Gothenburg, and other universities and colleges in the region such as University of Borås, University of Skövde, University West).

The large OEMs in the region are Volvo Cars Corporations and organisations within AB Volvo, such as Volvo Buses Corporation, Volvo Group Trucks and Advanced Technology & Research (within Trucks).

Research-driven or research-intensive suppliers and SMEs are few in number and are mostly small. Several existing engineering consultancy firms have development engineering competences in the studied areas, and new firms will likely develop in this area. The SMEs relevant to SAGE primarily consist of small firms within emerging ecosystems for e-mobility, biofuels and transport efficiency. The regional level of innovation

'management' has primarily aimed to initiate and support innovation milieus and platforms for cluster development by using a network of existing constellations of actors.

The public actors that promote advanced technical research are national agencies (national support of advanced 'competence'), primarily VINNOVA and the Energy Agency. Regional and local public actors primarily support the organising of public–private collaboration and co-fund parts of the R&D spectrum for which further technology development and implementation require that testing is conducted in real-world situations. Primary regional and local funding actors include Region Västra Götaland and Business Region Gothenburg.

Cluster organizing functions are located at various and highly specialised positions in the overall system, within each cluster initiative, within board functions of R&D programmes or within 'stakeholder forum' groups. Therefore, a de facto coordination function exists in technical speciality fields. Commonalities between the different cluster initiatives exist. A limited number of actors tend to be partners and reappear in all or at least many of the different regional cluster initiatives, opening up the possibility of developing a 'meta-management' function in the regional cluster. A group of people from major organisations may potentially have such a function.

5.3. Mov'eo (Paris region and Upper Normandie)

Mov'eo "Private cars and public transport safe for man and his environment" has been created in June 2006 as part of the "Pôle de compétitivité" policy launched by the French government. Mov'eo is a research driven cluster dedicated to the domain of automobile and mobility and gathers members representing the triple helix (legal entities conducting research, businesses entities, regional/local authorities).

Mov'eo works on collaborative and innovative projects with the aim to reinforcing international competitiveness of French businesses. The cluster forecasts developments in clean technologies, low CO2 vehicles, safe and connected vehicles, new mobility solutions. Its collaborative projects focus on seven Strategic Activity Domains:

- Intelligent Mobility Solutions
- Road Users Safety
- Demonstration and Low CO2 Vehicles
- Vehicles Environmental Footprint
- Energy Storage Systems
- Mechatronics Systems
- ICE Powertrains

As Mov'eo was created in the Paris and Normandy regions, at the core of the centralized French automotive R&D cluster, it has had to deal with the objectives of its various members with focuses ranging from Regional to National and Global.

In six years, Mov'eo has become a place where sustainable collaboration between different actors of the automotive industry is built. Mov'eo has reinforced the links between major industrials, SMEs, universities and laboratories and built a dynamic network to meet the technological challenges of clean and safe mobility.

Mov'eo contributes to the dynamics of regional attractiveness and industry competitiveness through a cooperative mode of operation:

- Industry-oriented projects carried out jointly between large, small and medium enterprises, research institutions and training organizations.
- Territory-focused management, with the share of infrastructure and modern test facilities

Inside Mov'eo the review, improvement, advice and expertise to certifying R&D projects is performed in Thematic Strategic Groups (DAS). These are permanent working groups with standardized organization and processes. Besides R&D projects, Mov'eo manages cross-cutting action plans such as a special action for the benefit of SMEs and also International, Education and Economic Intelligence actions plans. Mov'eo has also Regional Working Groups and their missions are to contribute to the regional expansion of the Pôle and to organise the network at regional level.

Just as for other clusters, the Mov'eo environment includes many initiatives, programs and institutions dealing with Safe and Green vehicles. Coordination is more or less achieved thanks to affinities between individuals or between organisations in these various ventures.

For the "Pôles de compétitivité", a second evaluation process has been carried out at the beginning of 2012, and at the beginning of 2013, this policy will be reviewed and possibly modified by the French Government.

5.4. Regensburg Cluster

The e-mobility cluster Regensburg is a recent and developing cluster. In beginning of 2011 the existing Automotive Forum has expanded and structured its activities in the field of electric mobility. The cluster enterprises are mainly suppliers and service providers focused on ICT technologies. Their key competences as well as those of both Universities of Applied Sciences are mirrored in the structure of the cluster – in form of four thematic working groups:

- Powertrain,
- Safety architecture in electric vehicle,
- Intelligent energy management / Smart grid,
- Intelligent charging infrastructure.

A particular strength of Regensburg in terms of automotive related research is the high level of industrial RTD activities at the companies.

The cluster is strongly promoted and coordinated by the Department of Economic Development of the City of Regensburg, which provides management resources for the development of the initiative as well as its strong experience with industrial cluster initiatives.

The activities of the e-mobility cluster Regensburg are fully embedded in the research, technology and innovation policy of the Bavarian State Government as well as the German National Electromobility Development Plan and their different actions related to cluster and / or electromobility development.

The Regensburg cluster is represented in the SAGE project by the City of Regensburg being a local authority, Continental Automotive as business entity with strong in-house research capacities and the University of Applied Sciences Regensburg with its focus on research in the area, all involved in the cluster strategy and covering the full triple helix.

5.5. Piedmont region

The Piedmont region is worldwide known as the "cradle" of the Italian automotive industry. The region automotive vocation is undoubted, in fact the Italy's car industry has its roots in Turin since the FIAT foundation's in the distant 1899. Piedmont is today a sophisticated multi-firm automotive production system (an automotive cluster reputed one of Europe's five "automotive intense" Regions), consisting of vehicle manufactures (Fiat S.p.A. and Fiat Industrial), small and large automotive supplier firms, leading edge private research and technology centers (like CRF and GMPT-E), world-leaders in car styling and design development (like Bertone, Italdesign-Giugiaro, Pininfarina), a highly specialized machine tool industry connected to automotive industry, science centers and academia (Politecnico and University of Torino). In short, the regional automotive cluster is characterized by a distinctive feature: the entire planning and production cycle is all concentrated in the same area (particularly, in the Torino area) and the region's know-how encompasses all automotive sectors: cars, light and heavy commercial vehicles, buses, earthmoving machines. The region also hosts many specifically focused on mobility research and innovation, as wells as car styling and design firms. The cluster ecosystem is centred on the extended university campus of Politecnico where an open innovation centre integrating research, education and innovation has been developed (the Cittadella Politecnica).

As far as education in fields related to SAGE scope is concerned, Politecnico di Torino (POLITO) is the main stakeholder in the region. POLITO provides 32 MSc degree courses, 24 Ph D courses and 40 Post graduate programs. In 1999 POLITO and CRF instituted the BSc and MSc programs in Automotive Engineering (also given in English since 2006), which focus on environmentally friendly powertrains and chassis design. They also offer interdisciplinary competences including advanced design and manufacturing methodologies, industry development processes management, and target achieving processes. The region also draws on the capacities of the COREP consortium for continuous education, consortium for computational technologies (TCN), SAFI, as well as professorships from Industry (CRF), Science Centres (ENEA), Technology Parks and other Universities (such as Torino and Piemonte Orientale) already well connected with POLITO to cover all technical, environmental, social and economic aspects. The long tradition of participating in international university networks (such as CLUSTER, COLUMBUS, PEGASUS, TIME, ECIU), establishing international campuses (such as the Sino-Italian campus of Tongji University in Shanghai) and inviting industry and commercial actors to participate in the design and provision of education (such as the long term collaboration between CRF and POLITO and the involvement in education of Brembo, Pirelli and GMPT-e) supports the region capacity to design new education of relevance for SAGE project.

The regional innovation system is well developed and integrates academia, research centres, multi-national enterprises, large firms and SMEs to bring first rate knowledge to practical implementation and business deployment. A physical example of this capacity is the Citadella Politecnica, the 170,000 m^2 recent expansion of

the POLITO main campus, which is the place dedicated to cooperation between POLITO and industries, support for new venture formation and incubation capacity. The region also features significant capacity to support and develop existing businesses, through the close collaboration between Fiat, GMPT-E and POLITO, as well as the Technology and Science Parks and Innovation Clusters, which supports small, medium and large businesses by creating a rendezvous point for innovation-driven companies and raising their technological level through radical innovation and experimentation.

6. The Ecosystem of the Cluster: the Public Actors

This Chapter provides a brief overview of the public actors which are involved in the research and innovation system of each SAGE cluster. Both National and regional innovation systems are described and an overview is given of the related policies and funding opportunities for the automotive sector.

Chapter 4 provides a general overview on the stakeholders population for each SAGE Region (public, private, PPP and non profit organization are considered).

6.1. National public administrations

National agencies have a central role in developing policy and funding for the Road Transport sector both in Sweden and France. Their aim is to promote innovation systems (VINNOVA and Agency for Economic and Regional Growth in Sweden; OSEO in France with special focus on SMEs) as well as R&D and education in different focus areas (Energy, Environment and Transport sectors). A list of the main national agencies and public bodies in Sweden and France is reported in Tables 6.a and 6.b, respectively.

In Germany, the innovation-related framework conditions and the strategic vision for R&D for the whole country is responsibility of the Federal Government, which also provides the bulk of funding for public research organizations, large research centers and programs aiming at supporting industry-academia linkages. The 16 Laender governments can use their regional capabilities, resources and infrastructure in support of R&I in the same technology context of the federal government, but with differences in emphasis. The responsibility for national and laender policies and measures is divided between different ministries, which are listed Table 6.c. A set of specialized public, semi-public or private independent institutions (called Projekttraeger – PT) administrates the programmes, manages the calls, monitors the project advancements and is also involved in the design of programmes.

In Italy (Table 6.d), the strategic vision for R&D for the whole country is responsibility of the Government (Ministry of Research and University; Ministry of Economic Development), which also promote national R&D programs (PRIN, FIRB, INDUSTRIA2015) to provide co-funding for public research organizations, large research centers and programs aiming at supporting industry-academia linkages.

Table 6.a: National Public Actors in Sweden

Name	Description
VINNOVA Swedish Governmental Agency for Innovation Systems. P.15 RR RVG, Sect. 3.1.1	VINNOVA was established in 2001 under the Ministry of Enterprise, Energy and Communications. Some 200 people work at VINNOVA's offices in Stockholm and Brussels. Mission. The aim of the agency is to increase the competitiveness of Swedish researchers and companies and promoting sustainable growth by funding needs-driven research and the development of effective innovation systems. An important task for VINNOVA is to increase the cooperation between companies, universities, research institutes and other organisations in the Swedish innovation system. Activities towards this end include investment in strong research and innovation milieus, investment in projects to increase commercialisation of research results and the creation of catalytic meeting places in the form of conferences and seminars. VINNOVA is the national contact agency for the EU Framework Programme for R&D. Budget The budget for funding projects is 220 MEuro each year.
Energimyndigheten: The Swedish Energy Agency P.19 RR RVG, Sect. 3.1.2	Mission. The Agency operates in various sectors of society to create conditions for an efficient and sustainable energy use and a cost-effective Swedish energy supply. It supports long-term research and development focusing on the production of motor fuels from renewable sources and of more efficient vehicle engines that can run on alternative fuels
Tillväxtverket: The Swedish Agency for Economic and Regional Growth P.20 RR RVG, Sect. 3.1.3	The Agency is part of the national government system for regional national development. It has 11 regional offices (one is in Västra Götaland) and around 300 employees. Mission The agency has as its aim to strengthen regional development and facilitate enterprise and entrepreneurship in Sweden. Overall objectives are: to increase the number of companies in the area of sustainable growth, to enhance regional development; to make it easier to set up and run small businesses.
Fouriertransform P.20 RR RVG, Sect. 3.1.4	It is the state-owned venture capital company for the development of the Swedish automotive cluster's competitiveness on a commercial basis. Mission: Fouriertransform mission includes taking an active role as an owner. It contributes expertise by placing qualified representatives on the boards of all the companies in which it holds an interest. The strategic investment areas: • Sustainable vehicles (battery technology, hybrid systems, combustion/engine technology, and technology that improve the efficiency of materials and Energy); • Smart vehicles (smart functions in both commercial vehicles and cars based

	on a technical platform in the vehicle and on content services made possible by such a platform); • More efficient production (including sustainable production with profitability potential based on strong environmental driving forces such as energy efficiency, emissions, recycling and waste) <u>Budget:</u> In 2008, Fouriertransform was allocated equity of around 3 GSEK for commercial cluster development in the automotive sector.
Trafikverket: The Swedish Transport Administration P.20 RR RVG, Sect. 3.1.5	The Agency was created in 2010 and has about 6,500 employees in 5 operational areas (Society, Transport, Investments, Major Projects and Profit Centres). <u>Mission</u> It is responsible for the construction, operation and maintenance of all state owned roads and railways. *Trafikverket* also develops long-term plans for the transport system for road, railway, sea and air (including R&D in infrastructure, safe and environmentally-sound transports)
National Forum for Innovation in Transport Sector P.21 RR RVG, Sect. 3.1.6	The forum has been formed, as a result from studies reported in Swedish Government Official Board, and will gather all primary national actors in the transport arena, thus establishing a platform for strategic collaboration between private and public interests in the transport arena. <u>Mission</u> It is expected to develop common "research and innovation agenda" and to have a coordinating function for the future transport issues that the government addresses. The main roadmaps to be developed in 2012-13 are: • *High Capacity Transport (organized by CLOSER at Lindholmen Park)* • *Bus Systems (AB Volvo and Scania)* • *New Fuels* • *Electrification of road transports (emobility incl. electrified roads)* • *Traffic management (icl. ITS)* – about all transport modes (SAAB, The Swedish Transport Administration, The Swedish Maritime Administration)

Table 6.b: National Public Actors in France

Name	Description
ANR (The French National Research Agency). P.24 RR Mov'eo, Sect. 3.3.3	The agency is a research funding organisation, which was established by the French government in 2005. ANR funds stabilized at around 850 MEuro in 2010, which are available in all scientific field for fundamental and industrial research as well as for research through public/private partnership.
ADEME (French Environment and Energy Management Agency) P.24 RR Mov'eo, Sect. 3.3.4	Public agency under the joint authority of the Ministry for Ecology, Sustainable Development and Energy and the Ministry for Higher Education and Research. ADEME supports the emerging fields of knowledge and technology.
OSEO P.24 RR Mov'eo, Sect. 3.3.5	OSEO is a public-sector institution dedicated to back innovation and growth of SMEs. OSEO offers institutions and banks involved in SME financing both consultancy services and technical support. In 2010 OSEO support to French companies totalled 29,6 GEuro.
Caisse des Dépôts P.25 RR Mov'eo, Sect. 3.3.6	Public group serving general interest and economic development. The group is constantly inventing new ways of supporting national and local public policies and, through long-term investments, it supports development projects in all territories.
Research tax credits (CIR - Crédit Impôt Recherche) P.25 RR Mov'eo, Sect. 3.3.7	It is a corporate tax relief measure based on R&D expenses incurred by firms operating in France. In 2009, 6,2 GEuro were reimbursed to companies in France for R&D spending in previous years.
DGCIS (Directorate general for competitiveness, industry and services)	The DGCIS reports to the Minister for industrial renewal and the Minister for craft industries, trade and tourism. It aims at developing competitiveness for industry and services, as a driving force for jobs. It improves the business environment for all firms, from very small businesses all the way up to major groups. DGCIS also supports the French cluster policy

Table 6.c: National Public Actors in Germany

Name	Description
Federal Ministry of Education and Research (BMBF) P.25 RR Regensburg, Sect. 3.3.1.1	The BMBF is mainly engaged in: (i) the financing of top-level R&D projects in both enterprises and public science bodies within thematic programs (i.e. programs focused on certain fields of technology), including specific cluster-oriented measures in Eastern Germany; (ii) co-funding basic and applied research at public re-search organizations and the German Research Foundation (DFG - Deutsche Forschungsgemeinschaft); (iii) technology transfer and networking activities, including the promotion of innovation within regional networks and the provision of an innovation infrastructure; and (iv) tertiary education, including activities that concern the mobility of students and scientists.
Federal Ministry of Economics and Technology (BMWi) P.25 RR Regensburg, Sect. 4.3.1.1	The BMWi addresses innovation activities through the following main channels: (i) designing appropriate framework conditions for innovation, including competition policy (e.g. telecommunications, energy, trans-portation), the legal framework (e.g. e-commerce) and conditions conducive to entrepreneurship; (ii) offering direct financial support to SMEs that is not specifically targeted at certain fields of technology through grants, loans and VC in order to stimulate innovation, to foster technology-based start-ups, to promote R&D cooper-ation and to increase innovation management capabilities; (iii) providing infrastructure support to the enter-prise sector; and (iv) running application-oriented thematic and sectoral research programs that provide grant funding to enterprises and public science bodies such as energy research, space and aviation research, and ICT research.
Bavarian Ministry of Economic Affairs, Infrastructure Transportation and Technology (STMIVT) P.30 RR Regensburg, Sect. 3.3.1.2	Within the STMWIVT, technology policy is addressed by various departments: Dep. Innovation, Research and Technology, Dep. Industry, Foreign Trade and Dep. Medium-Sized Businesses, Services, Craft (MWIVT). The ministry describes itself as an "organiser" of technology transfer or innovation management. In addition, the MWIVT is responsible for R&D and technology funding.
Bavarian Ministry of Science, Research and the Arts (STMWFK) P.30 RR Regensburg, Sect. 3.3.1.2	The STMWFK is responsible for the universities, universities of applied sciences and the large scale research institutions. For the implementation of the Bavarian RTDI policy instruments, several (semi-)public bodies have been established (e.g. "Bayern Innovativ", which is responsible for technology-transfer activities, the "Landesanstalt für Aufbaufinanzierung" and "Bayern Kapital", which are responsible for Venture Capital Financing, the Technology and Start-Up Centres are responsible for the support of entrepreneurial activities, etc.).
Projekttraeger (PT) P.26 RR Regensburg, Sect. 3.3.1.1	Program administration is conducted by a set of specialized public, semi-public or private institutions, so-called Projekttraeger (PT). As independent organizations, they administer and manage innovation policy programs on a contractual basis. This

	includes activities such as managing calls for proposals, project evaluation, funding decisions, projects and program monitoring, and public relations. They are also quite strongly involved in the design of programs and in stakeholder debates. There are more than 20 of such PTs, both serving federal and Laender ministries. Many of them have developed out of public research bodies (especially from the large governmental research centers) and their staff includes many people with an academic or research background in the thematic area for which the PT is responsible.

Table 6.d: National Public Actors in Italy

Name	Description
Ministry of Education, Universityand Research (MIUR) P.25 RR Piedmont, Sect. 2.2	It is responsible for public and private education for all schools of all levels, both public and private. For private education, responsability is limited to programs. MIUR supervises the research of the state through the appropriate structures and dedicated programmes (such as PRIN, FIRB, FAR, FISR: P.26 RR Piedmont, Sect. 2.2).
Minister of Economic Development, Infrastructure and Transport P.27 RR Piedmont, Sect. 2.2	The Ministry of Economic Development is responsible for a wide variety of policies, including economic development and cohesion, energy and mineral resources, telecommunications, internationalisation and business incentives. The Ministry launched the supporting program INDUSTRIA 2015, which proposes a new strategy for the development and competitiveness of the Italian economy, which is based essentially on the instrument of industrial innovation projects (art. 1, comma 842 of Law 296/2006). This tool is designed to establish the strategies and is based on a concept of industry extended to new supply chains that integrate manufacturing, advanced services and new technologies and on the analysis of economic and productive future scenarios.

6.2. Regional and local public administrations

In Western Sweden, Region Västra Götaland mainly supports cluster initiatives and collaborative project activities within these cluster initiatives. R&D is primarily conducted by universities and industries in collaboration and supported by national and European funds, as well as through in-kind from industry. Therefore, R&D basically occurs as applied research or advanced engineering in cooperation between university and industry.

In France, Regional Councils are putting forward solutions to promote economic development, support companies, bring together stakeholders involved in R&I, provide grants for research and innovation, as well as to innovate training. R&D investments come from both public and private sectors. To give an example, in Paris region the total R&D expenditure in 2008 was about 16.4 GEuro and involved 143,800 people. The public sector accounted for 5.7 GEuro and 57,900 full-time equivalent jobs, whereas the remaining expenditure and capabilities came from private sector.

Regional innovation system in Germany, reflects the federal structure of the nation. In addition to the Laender government bodies, already discussed in the section “National Context”, administrative regions, cities and city agencies are the main actors to back initiatives aiming at promoting R&D supporting measures.

In Italy, the Regions can issue their own Research and Innovation Programs to provide clear targeted priorities to R&D and innovation, as well funds to support the deplopment of the new ERI Process, including technology development and demonstrations. These Programs are also intended to stimulate innovative contributions from the national industry.

The main regional public actors in the regions involved in SAGE are summarized in Tables 6.e-6.h.

Table 6.e: Public Actors in Western Sweden

Name	Description and Current Assignements
Region Västra Götaland (RVG). P.22 RR RVG, Sect. 3.2.1	Self-governing region formed in 1999. Annual budget: 5 GEuro managed by Regional Council (elected every 4 years) <u>Assignements and Mission</u> *Public transportation*: 7% of the total budget *Promoting growth and sustainable development*. The responsability is still shared between regional and National level. The RVG focuses on: • planning • infrastructure • develop innovation policy: o support of entrepreneurship: seed financing/support to incubators and schools of entrepreneurship o support to innovative SMEs: programmes to stimulate SME innovation and competitiveness; facilitate contacts between SMEs and academic researchers; support industrial development centres; fund enabling structures such as incubators, arenas, platforms; o various supporting functions within the existing RTD clusters in Automotive (and the other clusters of the revion): co-fund centres of excellence, cluster initiatives, research, development and demonstration projects. o Supporting functions within the existing regional science parks/open arenas (Lindholmen and Innovatum Science parks with Automotive focus)
Region Västra Götaland - Regional Development Board P.23 RR RVG, Sect. 3.2.1	It manages an annual budget of 770 MSEK to co-finance development projects and a similar budget to support organizations, schools and initiatives in the region (+ administration costs) <u>Assignements and Mission</u> Development of innovation policy
Region Västra Götaland - The Environmental Board P.25 RR RVG, Sect. 3.2.1	It manages an annual budget of 70 MSEK of which half is invested in development projects that are coordinated by partners in municipalities, industry and academia. <u>Assignements and Mission</u> Promote sustainable growth in the key areas energy, water, food and transport. Alternative fuels implementation (especially *biogas*) has been a prioritized topic for many years.

Region Västra Götaland - The Public Transport Board and Västtrafik P.26 RR RVG, Sect. 3.2.1	The Public Transport Board has been recently formed. Assignements and Mission Public Transport Board assignements: the Board is responsible for the strategic development of public transport in RVG, with regional responsibility for R&D. Västtrafik is the public transport company (the 2nd largest one in Sweden) owned by RVG: 2,600 vehicles and 21,000 stopping places. Assignements and Mission Coordinate the public transport in the region; commission vehicle operation to contractors
Sub-regional organisations:Gothenburg Region, Sjuhärad, Skaraborg and Fyrbodal P.27 RR RVG, Sect. 3.2.2	They are Associations for Local Authorities in which the 49 municipalities of RVG are organized. Each Association has its own sub-regional programme, which is attached to a budget for regional development based on an agreement with RVG. Each association cooperates closely with RVG. Assignements and Mission Promote co-operation over municipal borders; provide a forum for the Exchange of ideas; to contribute to growth and development.
Business Region Gothenburg (BRG). P.28 RR RVG, Sect. 3.2.3 P.66 RR RVG, Sect. 4.3.4	BRG is a non-profit company 100% owned by the City of Gothenburg. Gothenburg Region association has chosen to have Business Region Gotheburg (BRG) as responsible for the sub-regional programs in the Gothenburg area. Assignements and Mission Contribute to sustainable growth. Key business areas are biomedicine, design, finance, logistics, visualisation, ICT and the automotive sector. The company takes project broker and management roles in local implementation and development projects. There is not a specific technical focus and projects are usually not R&D or intensive; however a de-facto focus is represented by *biogas*.
City of Gothenburg P.28 RR RVG, Sect. 3.2.4	Assignements and Mission It is actively involved in policy work and development projects relating to the automotive industry and safe and green vehicles. A large portion of the activities are executed through Business Region Göteborg and Lindholmen Science Park. But a lot of work is also being done at the Traffic and Public Transport Authority. The Traffic and Public Transport Authority has led several European projects on *inner-city freight distribution* and related topics, including Civitas, Civitas Catalist, Tellus och START.

Table 6.f: Public Actors in Paris and Upper Normandie (Mov'eo Region)

Name	Description and Current Assignements
Paris (Ile de France) Regional Council Upper Normandie (Haute-Normandie) Regional Council P.26 RR Mov'eo, Sect. 3.4.	*Assignements:* Boosting employment and promoting knowledge. • Start-up grants for employees and job-seekers looking to start a company and for directors of young companies • Grants to finance companies with a high growth potential. • Funding for "Areas of major interest". They group together higher education establishments and academic research laboratories. • Support research by facilitating the training and integration of researchers, helping to equip laboratories and backing promising projects • Development grants for small and exporting companies. • Support for "competitiveness clusters" (public-private partnerships). • Direct investment grants by industrial sector. • A full support system for small businesses.
Paris Region Innovation Center P.28 RR Mov'eo, Sect. 3.4.2.	It was created by the State, the Paris Region and OSEO in 2009. *Mission*: • Supporting SMEs and help them implementing their innovation projects • Spreading best practices for responsibile innovation, to acquire new markets, reduce environmental footprint and social inequalities • Networking public and private actors
Innovation Agency in Upper Normandy (SEINARI) P.28 RR Mov'eo, Sect. 3.4.3.	It was created by the State, the Upper Normandy Region and OSEO in 2010. *Mission*: • Support innovation by bringing together the regional partners of innovation around a common strategy • Promote a broader concept of innovation • Strengthen the coherence and efficiency of support schemes and business support
Chambers of Commerce	They support the clusters.

in Paris and Upper Normandy regions P.28 RR Mov'eo, Sect. 3.4.4.	✓ Chambre de commerce et d'industrie de Paris ✓ Chambre de Commerce et d'Industrie de Versailles Val-d'Oise / Yvelines (CCIV) ✓ Chambre de Commerce et d'Industrie de Rouen ✓ Chambre de commerce et d'industrie du Havre

Table 6.g: Public Actors in Regensburg Region

Name	Description and Current Assignements
Bavarian State bodies P. 30 RR Regensburg Sect. 3.3.1.2.	Responsibility for regional RTDI policy in Bavaria lies with the regional government (Staatskanzlei) and is currently distributed between two main bodies: the Bavarian Ministry of Economic Affairs, Infrastructure Transportation and Technology (STMIVT) and the Bavarian Ministry of Science, Research and the Arts (STMWFK). Within the STMWIVT, technology policy is addressed by various departments: Dep. Innovation, Research and Technology, Dep. Industry, Foreign Trade and Dep. Medium-Sized Businesses, Services, Craft. The ministry describes itself as an "organiser" of technology transfer or innovation management. In addition, the MWIVT is responsible for R&D and technology funding. Strongly involved in the Bavarian technology policy is furthermore the STMWFK, which is responsible for the universities, universities of applied sciences and the large scale research institutions. For the implementation of the Bavarian RTDI policy instruments, several (semi-)public bodies have been established (e.g. "Bayern Innovativ", which is responsible for technology-transfer activities, the "Landesanstalt für Aufbaufinanzierung" and "Bayern Kapital", which are responsible for Venture Capital Financing, the Technology and Start-Up Centres are responsible for the support of entrepreneurial activities, etc.).
City of Regensburg P.35 RR Regensburg, Sect. 3.3.1.2 .	The City of Regensburg is the capital of the Bavarian administrative region Upper Palatinate and one of the fastest-growing regions in Germany The automotive industry is one of six sectors at the forefront of the Regensburg business region. Regensburg has a long-standing cluster strategy in the fields of technology, biotech and IT-security and plans to pursue this cluster strategy in the future; it is currently shaping new initiatives in specific automotive related sub-sectors, e.g. Electromobility or OLEDs.
Regensburg Energy Agency. P.35 RR Regensburg, Sect. 3.3.2	It was created by the City in 2009 with the help of the EC's Intelligent Energy Europe Programme,. It backs initiatives aiming to achieve sustainable energy use in the region
Department of Economic	It holds close contacts to the associated partner institutions in the Regensburg clusters and provides the gateway to access and involve

Development P.36 RR Regensburg, Sect. 3.3.3	further partners from industry and business in the project activities

Table 6.h: Public Actors in Piedmont

Name	Description and Current Assignements
Regione Piemonte	Piedmont stands among the top Italian Regions for investment in R&D (more than double the Italian average, one of the leader in Europe) and the first one for expenditure on innovation in the manufacturing sector. This potential is doubtless marked in industrial process and product innovation. The regional strategy is based on a specific **Regional Law** (the R.L. n. 4/2006[1]) that officially instituted "the *Regional System for Research and Innovation*" that includes the main institutions and stakeholders that develop and promotes RSI activities. The Law intends to promote research and innovation, consolidate the research system and create a culture of systematic evaluation and performance improvement within the field of innovation policy. Associated with the R.L. 4 are two implementing official documents: the **PTR-Three years Research Plan**, the policy instrument that defines the operational tools and the interventions for the policies on R&D and the **General Guidelines for R&Ipolicies**. The PTR has a close correlation with an other important regional programming document, the "Multiannual Programme of intervention for production activities" associated with the regional framework law 34/2004.
Torino Chambers of Commerce	The Torino Chamber of Commerce is a public institution with autonomy of statute, regulation, management and accountability, and relies on a flexible structure, benting on innovation and efficiency based. The Chamber of Commerce is almost entirely self-funded. Its income derives largely from the annual Membership fee paid by all companies in the Province that are listed in the Register of Enterprises. This income is primarily employed to support members' business activities. Thanks to its 350 employees, the Torino Chamber of Commerce plays a key role in the promotion and the development of the local economy. There are almost 6 million businesses in Italy, 400,000 of these are based in Piedmont and over 200,000 in the Torino Province. Then, the Chamber's most important administrative activity is keeping the Register of Enterprises, which is one of the organisation's strong points, an archive full of data which can be consulted anywhere in Italy, thanks to the computer network of the Chambers of Commerce (from the type of activity they perform to their balance sheets).

[1] *http://arianna.consiglioregionale.piemonte.it/base/coord/c2006004.html*

7. The Ecosystem of the Clusters: industry and academia in the regional automotive sectors

This chapterpresents the industry and academia stakeholders integrated into the automotive clusters of SAGE consortium.The report shows that SAGE regions host the headquarters, plants, engineering and production centres ofmany worldwide key-manufactures of vehicles. The presence of leading automotive suppliers, public research centres and universities is also significant, whereas professional organizations and SMEs complete the global picture of the cluster ecosystem.

7.1. Worldwide vehicle manufacturers

Western Sweden Region

AB Volvo (http://www.volvogroup.com): The Volvo Group is a publicly-held company headquartered in Gothenburg. It isone of the world's leading providers of commercial transport solutions and offers products through different business organisations: Trucks, Buses, Construction Equipment, Penta – engines and drive systems for boats and industrial applications – and Volvo Aero – aircraft engine components.
Volvo Buses Corporation is a business area within the Volvo Group, and is the world's second largest bus manufacturer. The head office is in Gothenburg, where product planning and product development are primarily concentrated.
Volvo Group Trucks Technology has been operational since January 1, 2012, when activities within Volvo 3P, Volvo Powertrain, Volvo Parts, Volvo Technology and Non-Automotive Purchasing were merged. Today, Volvo Group Trucks Technology is a worldwide entity within Volvo Group that covers the value chain from long-term research and planning to final delivery of complete vehicles and services to the Volvo Group's truck business, and supports products in the aftermarket.
Advanced Technology & Research (former Volvo Technology, VTEC) is the Volvo Group's centre for innovation, research and development. It was established in 1969 and became an entity within Volvo Group Trucks Technology on January 1, 2012. Its main areas of operation are research, advanced engineering, product development and business engineering, and it offers corporate services to Volvo Group in the areas of intellectual property (IP) management, standards, intelligence and materials technology.
Volvo Car Corporation (http://www.volvocars.com): The Volvo Car Corporation (VCC) is a global company and manufactures cars and develops services for customers in approximately 100 countries. The company was founded in 1927 and was part of the Swedish Volvo Group until 1999, when American Ford bought its car manufacturing segment. Since 2010, VCC has been owned by the Chinese entity Zhejiang Geely Holding Group. VCC headquarters and large assembly plant are located in Gothenburg. Production of smaller car models is based in Uddevalla, 80 kilometres north of Gothenburg, and in Ghent, Belgium. Most of the development departments, the crash test centre, a central warehouse and several other key units are also in Gothenburg.
Western Sweden had also hosted **Saab Automobile** until its bankruptcy in Decemer 2011. In June 2012, Saab was acquired by the National Electric Vehicle Sweden AB, owned by Chinese and Japanese interests, with the

aim to start the development and manufacture of electric vehicles in Trollhättan. National Electric Vehicle Sweden AB now owns the development platform for Saab and the Saab brand.

Mov'eo (Paris region and Upper Normandie)

PSA Peugeot Citroen: the group is the Europe's seconda largest car manufacturer. Its main locations in the region are:

- Manufacturing plants in Poissy (Yvelines) and Aulnay (Seine-Saint-Denis).
- Worldwide Technical centre in Velizy (Yvelines). It is one of PSA Peugeot Citroën's four automotive R&D centres.
- Engine R&D centre in La Garenne (Hauts-de-Seine)

In 2010, PSA created the Science & Technologies Exploratory Lean LABoratory, or StelLab, the Group's first facility formanaging scientific discovery. StelLab organises partnerships with leading-edge scientific laboratories in and outside Europe through joint research facilities known as OpenLabs, which pool the partners' research teams and testing resources. (Saclay: Computational mechanics, Orléans: Thermodynamics Energetics, Poitiers: Fluidics, Bordeaux: Electronics-photonics, Metz: Materials & Process, Marseille + Aix: Motions sciences + interactive simulations, Lausanne: Global Innovation).

Renault: The Renault group has been making cars since 1898. To meet the major technological challenges of the automobile of the future - and electric vehicles in particular - while pursuing its strategy of profitable growth with the Renault, Dacia and Renault Samsung Motors brands, the Group also relies on the Alliance with Nissan, the partnership with AvtoVAZ and, more recently, the strategic cooperation agreement between the Renault-Nissan Alliance and Daimler AG. The main locations in the region of the Renault group are:

- Production plant in Flins (Yvelines), Cléon (Seine-Maritime), Sandouville(Seine-Maritime) and Dieppe(Seine- Maritime)
- Worldwide R&D centre: Technocentre in Guyancourt (Yvelines). It groups all the skills and technologies at the heart of Renault vehicle design. Located 30 km outside Paris, it is staffed by 12,000 employees and has a surface area of 150 hectares
- Technical centres in Rueil (Hauts-de-Seine) and in Lardy (Essonne)

Regensburg Cluster

No worldwide vechicle manufactures are present in the e-mobility Regensburg cluster (Remark: BMW has a large production facility in Regensburg but is not involved in the cluster activities).

As we will see in the next sections, the E-Mobility cluster Regensburg is a distinct cluster of suppliers and providers focusedon the value chain of electromobilty – powertrain, charging infrastructure & smart grid as well as ICT technologies, and this can be seen as a complementarity with respect to the other SAGE clusters, all characterized by a strong presence of vehicle manufactures and OEMs and a broader technical focus.

Piedmont region

Torino hosts the headquarters of Fiat S.p.A. and Fiat Industrial.

Fiat S.p.A. (http://www.fiatspa.com): Fiat is an international group that designs, produces and sells passenger cars and commercial vehicles for the mass market (Fiat Group Automobilesunder the Fiat, Alfa Romeo, Lancia, Abarth and Fiat Professional brands) as well as luxury and performance cars (under the Ferrari and

Maseratibrands). Fiat has further expanded its global reach through the alliance with Chrysler Group, whose product portfolio includes the Chrysler, Jeep, Dodge, Ram and SRT vehicle brands and the Mopar parts and services brand. The Group also operates in the components sector, through Fiat Powertrain (specialized in research, development, production and sale of engines and transmissions for passenger cars and light-duty vehicles), Magneti Marelli(international leader in the design and production of advanced automotive systems and components) and Teksid (world leader in the production of iron and castings for the automotive industry), and in the production systems sector, through Comau (global leading provider of engineering solutions, with specific focus on advanced manufacturing systems, sustainable automation and service solutions). Fiat S.p.A. has 158 plants and 77 R&D centres in the world (44 and 37 in Italy, respectively). Torino and Piedmont region host plants, engineeringand production centres of FGA, Magneti Marelli, Comau and Teksid. In addition, Torino hosts the headquartes of Centro Ricerche Fiat (http://www.crf.it), whichwas established in 1978 to serve as a center of expertise for the Group's innovation and development activities. Recognized internationally as a center of excellence, its mission is to provide a strategic lever for Fiat businesses.

Fiat Industrial (http://www.fiatindustrial.com): Fiat Industrialbegan operations on the 1st of January 2011 following the demerger of the activities of Iveco (http://www.iveco.com), CNH(http://www.cnh.com) and FPT Industrial(http://www.fptindustrial.com) from Fiat S.p.A. Each of the Group's businesses is a major international player in its respective industry sector. These three sectors design, produce and sell trucks, commercial vehicles, buses, special vehicles (Iveco), tractors, and agricultural and construction equipment (CNH), in addition to engines and transmissions for those vehicles and engines for marine applications (FPT Industrial). Iveco and FPT Industrial have plants as well as engineering and production centres located in Torino and Piemonte, whereas CNH has a manufacturing location in Italy at Jesi (AN, Marche region).

In addition, several international vehicle manufacturers have based in Torino area their R&D and styling centers taking advantage of the available local competencies via merge&acquisition operations, such as:

- **General Motors - Powertrain Europe** (located at Cittadella Politecnico at Politecnico di Torino). Founded in 2005, it is responsible for the development of all diesel engines and controls for General Motors passenger cars and trucks around the world. It counts on over 480 people.
- **VW Group –** Italdesign Giugiaro
- **TATA Group** - Trilix,
- **JAC** - Italy Design Center
- **Changan** - Automobile European Designing Center
- **Pininfarina.** The company has a worldwide famous style and engineering centre close to Torino and other sites in Germany, Morocco and China. A joint venture with Volvo is currently active for the production of Volvo C70. It is also worthwhile mentioning that Pininfarina has also developed two electric cars from 2008, the Pininfarina BlueCar and the Nido EV: BlueCar, designed for medium distances, also for suburban use; Nido EV, a proposal of city car for short journeys and mainly for urban employ. Nido EV is the first running prototype of the "Nido Development Programme", the project for an electric car conceived, designed and built entirely by the Pininfarina Style and Engineering Centre of Cambiano (Turin). The Nido EV is a veritable laboratory designed both to explore the electrification of a small city car and to develop a modular floorpan.

Finally, the following LE with leading edge private R&D centers specifically focused on mobility research and innovation have to be mentioned:

- **Mizar Swarco**, founded in 1981, is specialized in the design, development and implementation of advanced telematics systems. It has a strong reputation in Europe for its expertise in traffic management, public transport management, traveler information services and for OMNIA the “open platform designed to offer an easy and intuitive access to a wide range of ITS applications".
- **Bitron**, founded in 1955, is a privately owned multinational company leader in the research, development and manufacturing of mechatronic devices and systems for the automobile, appliance, HVAC and renewable energy industries.In the automotive business Bitron has the following specialties: HVAC Interior Devices, Body Interiors, Engine Thermal Systems, Suspension & Steering Systems, Transmissions
- **Bertone**, founded in 1912, is one of the earliest and most prestigious car companies, always keeping step with formal and technological evolution. The major and most celebrated world manufacturers entrusts Bertone with the task of realizing car models that are able to impose themselves as cornerstones in Car Design such as Alfa Romeo Giulietta Sprint, Lamborghini Miura, Lancia Stratos HF, Lamborghini Countach, Volvo 780 Coupé,Alfa GT, Fiat Panda. Bertone is today a high technology service company (complete manufacturing-cycle) in the automotive sector, as well as in transportation and engineering fields. Bertone services are Design (Automotive design, Transportation design, Industrial design, Concept design); Engineering (Product Engineering, Process Engineering, Advanced Engineering); Prototyping (Show Cars, One-off Cars); ICT (Information & Communication Technologies).
- **M.T.M. - BRC (Bogetti Romano Cherasco) Gas Equipment Co.**established in 1977 and started and headquartered in Cherasco (CN), about 50 km south from Torino.In the Eighties, BRC started to manufacture a complete range of LPG and CNG components. BRC took its place amongst leading edge technology companies when, in 1991, it brought to the market its first carburetion control electronic system and, in 1996, its first Italian LPG and CNG gaseous injection system. BRC currently produces a complete range of systems for converting vehicles from petrol to LPG and CNG to meet any market requirement, from the simple systems for carburettor vehicles to the highly sophisticated systems for Euro V vehicles equipped with OBD diagnostics.In 2003 M.T.M. - BRC Gas Equipment Co. finalised a prestigious strategic alliance agreement with the American company Impco, world leader in gaseous fuel industrial applications. An agent of BRC has been established in Trollhättan (Western Sweden region), where the new vehicle centre will convert Subaru cars to biogas vehicles.

7.2.Automotive Equipment Manufacturers and other major suppliers

Western Sweden region

Autoliv Sweden AB is part of Autoliv Inc (headquartered in Stockolm), the world’s leading automotive safety supplier. The company develops, markets and manufactures airbags, seatbelts, safety electronics, steering wheels, anti-whiplash systems, seat components and integrated child seats as well as active safety systems such as night vision, vision and radar systems.

Other important automotive suppliers are **Vicura AB** (that develops complete transmission systems and subcomponents for the international automotive industry, including hybrid drivelines), **Mecel AB** (systems and software development company specialised in in-car communication technologies, user interface development and consumer device interaction for automobiles, trucks, buses and their infrastructure) and **VBG Truck Equipment AB** (international leading supplier of coupling equipment for truck and heavy trailers). There is also a cluster of strong **IT and telematics companies** within the region.

Mov'eo (Paris region and Upper Normandie)

At least 100 automobile equipment manufacturers are based in the Paris Region. TheGerman **Bosch Group** (the world no. 1) is based at Saint-Ouen, the US company **Delphi** (the world no. 2) at Roissy, the Japanese giant **Denso** (the world no. 3) at Levallois and the German company **Continental** (the world no.4) in Rambouillet.. All have subsidiary companies here or operate R&D facilities in the same way as **Johnson Controls** from the USA (theworld no. 5), which employs 630 engineers and technicians at Cergy-Pontoise.Equally important, the region is also the head office base for two top French companies operating in this sector:**Faurecia**(Automotive Seating, Emissions Control Technologies, Interior Systemsand Automotive Exteriors) and **Valeo** (Powertrain Systems, Thermal Systems, Comfort and Driving AssistanceSystems, and Visibility Systems), the world number 8 and 9 respectively.

Other major players are: EDF Group (one of the European leaders in Energy), RATP (the 5th largest public transport company in the world), Veolia Transdev (public transport operator) and Total (international oil and gas company and chemical manufacturer).

Regensburg Cluster

The cluster counts by March 2012 five Automotive Equipment Manufacturers or Automotive Tier 1 suppliers. Of these, 3 are large enterprises (counting the overall employees of the group). If the employees in the regional branch are accounted for, 1 LE is present (Continental Automobile GmbH).

Continental AG is one of the world's leading suppliers to the automotive industry with extensive expertise in tire and brake technology, vehicle dynamics control, as well as electronic and sensor systems. In Regensburg **Continental Automobile GmbH** is offering a comprehensive portfolio for the electric mobility, which extends from special electric vehicle tires, over the complete electric drive, up to electronic systems like Smart Charging.

HELLA KGaA Hueck & Co. is an independent company and global player that develops and produces lighting and electronic products for the automotive business and has one of the biggest retail-organization for vehicle parts and accessories.

The **S-Y systems Technologies GmbH** offers optimized solutions for electrical and electronic distribution (market leader) and electric vehicle architectures. The company is a joint venture between Continental and Yazaki and benefits from the expertise of two global players.

PG Trade & Sales GmbHstarted out as a premium manufacturer for innovative and exclusive e-Bikes, Pedelecs and Urban-Bikes goes to the very edges of the luxury market. The latest coup is the sportscar PG-Elektrus, designed by Michael Fröhlich, as an urban combination of sustainability, lifestyle and design.

ZF Friedrichshafen AG is a leading worldwide automotive supplier for driveline and chassis technologies.

Other large automotive suppliers linked to the **e-mobility field** in Regensburg cluster are: Avago Technologies GmbH and Infineon Technologies AG, OSRAM Opto Semiconductores GmbH, and Tieto Deutschland. Main **energy and charge infrastructure suppliers** are: Kontron AG, Maschinenfabrik Reinhausen GmbH, Rhode & Schwarz GmbH, Schenider Electric GmbH and Siemens AG.

Piedmont region

In Piedmont region there are 33 automotive equipment manufacturers. Of these, 15 are large enterprises (such as Magneti Marelli, Oerlikon Graziano http://www.oerlikon.com/graziano/en/home/, Pirelli Tyre S.p.A., Sogefi http://www.sogefigroup.com/it/index.html and Teksid) and 18 are SMEs. The core business of these companies in Piedmont is focused on:

- integrated electronic modules;
- iron and aluminium modules
- plastic material modules
- active/passive safety systems and their control
- electric and electronic systems
- fluid systems
- transmission and brake systems

Other large enterprises include 9 engineering/design providers (working at design study, engineering design, develompement of dedicated platforms, prototyping, production of vehicles and bodies, product testing, logistics) and 56 specialists and subcontractors (dealing with equipment and molds, molding, foundry, intake and exhaust devices, cranking and ignition devices, chassis and cabin, electric and electronic devices, lighting devices, engine components, steering wheel/suspension/braking devices, transmission components, assembling).

7.3 Small and Medium Enterprises

SMEs are key player of innovation. Many SMEs are located in all SAGE regions and are developing innovative solutions for safe and green road vehicles.

Western Sweden region

Research-drivein or research-intensive SMEs are relatively few in number in Western Sweden and are mostly small. Local actors have promoted **biofuels and biogas**, **transport efficiency** and **electromobility**, therefore a significant share of SMEs in this region have competences in these fields (P.38-41 RR RVG, Sect. 3.7). A current trend is the start-up of several small companies investing in **innovative technology vehicle manufacturing** - electric vehicles for professional use, short-distance transportation and municipal mobility service.

Mov'eo (Paris region and Upper Normandie)

At the end of 2011, 50% of the 313 Mov'eo members were SMEs. 179 of them have been involved in the 136 R&D projects currently financed at Mov'eo and 14 SMEs are also members of the VeDeCoM institute (see Section 9.2 of this report and P.38 RR Mov'eo, Sect. 4.3.3). These figures support the central role of SMEs in Mov'eo cluster.

Detailed information about the compteneces available in the SMEs located in Paris region and Upper Normandie are reported in the Annex 5 to the Mov'eo regional report. Some examples of SMEs offering innovative technologies or concept are:

• ADM Concept: **ICT Technologies for car sharing systems**
• AREELIS TECHNOLOGIES: **Fluids dynamics**
• DJP: **Composite structures**
• INDUCT: **Robotics and embedded systems**
• INTEMPORA: **Multisensor software solutions**
• LUMENEO: **New urban electric vehicles**
• MUSES: **Electric scalable platform for specific needs**
• NEXYAD: **Data/signal/image analysis and understanding**
• PVI: **Electric buses and trucks**

Regensburg Cluster

The **Regensburg cluster** counts 41 Science and Technology enterprises. Counting the overall employess, 24 of these are SMES, whereas this number increases up to 36 if the employees in the regional branches are considered. All these SMEs are beasically suppliers or service providers whose competences can be found in the areas of powertrain electrification and of the ICT technologies for vehicles, charging infrastructures, energy supply and distribution. A description of the main compentencies of the SMEs of the Regensburg cluster can be found in the Regensburge regional report (Section 3.2.2).

Piedmont region

According to a study of STEP[2], in Piedmont there were 818 SMEs in 2011, 212 of which were medium enterprises. These SMEs can be further classified according to the following categories:

a) 121 engineering and design providers that works at:
   - design study
   - engineering design
   - develompement of dedicated platforms
   - prototyping
   - production of vehicles and bodies
   - product testing
   - logistics

b) 18 automotive equipment manufactures whose focus is:
   - integrated electronic modules;
   - iron and aluminium modules
   - plastic material modules
   - active/passive safety systems and their control
   - electric and electronic systems
   - fluid systems
   - transmission and brake systems

c) 680 specialists and subcontractors dealing with:
   - equipment and molds
   - molding
   - foundry
   - intake and exhaust devices
   - cranking and ignition devices
   - chassis and cabin
   - electric and electronic devices
   - lighting devices
   - engine components
   - steering wheel/suspension/braking devices
   - transmission components
   - assembling

[2] Osservatorio della filiera autoveicolare italiana 2012, STEP Ricerche srl, July 2012.

Additional details on the competences offered by Piedmont SMEs are reported in the Stakeholder list annexed to Piedmont regional report. It is worthwhile recalling here that the Piedmont SME's know-how encompasses **all traditional automotive sectors**: cars, light and heavy commercial vehicles, buses, earth-moving machines, etc. In the SMEs of the regional automotive cluster there has been recently an increasing attention toward **sustainable mobility**.

Electro-mobility is one of the sector in which the Piedmont SMEs can offer the entire value chain up to the realization of the vehicle. An example of this is offered by **Cecomp**[3],that has manufactured in Italy the Bolloré Bluecar under a join venture owned by Bolloré and Pininfarina called Vehicule Électriques Pininfarina Bolloré (VEPB). The Bolloré Bluecar is a small four-seat, three-door electric car desgined by Pininfarina and supplied by Bolloréas part of the Autolib' carsharing program in Paris. Another example is the concept car Phylla (2008), a solar and hydrogen powered fuel cell car that also have plug-in hybrid capabilities as well. The Phylla was developed by Centro Ricerche Fiat (as vehicle project leader) in combination with the Piedmont regional administration (which sponsored and funded the project), the Environment Park (which helped define and select innovative technologies for the environment) the Politecnico di Torino (responsible for the overall management of the project and coordination of the partners) and a significant number of suppliers in the region.

Alternative fuels(with specific reference to the application to to internal combustion engines of gaseous fuels, such as CNG and biogas, including NG/H2 blends) represent another area in which Piedmont SMEs can display their potential (taking also advantage of the leadership of Fiat in the deveolpmentof natural gas engines for passenger car and heavy-duty applications). In addition to the presence of many suppliers of powertrain components (such as METATRON s.r.l.), it is worthwhile mentioning the presence of a supply chain for the biogas production, where ACEA Pinerolese Industriale SpA and HYSYTECH play a major role in the development and implementation of the technologies required for biogas processing from renewable sources (biomasses derived from waste). The Innovation Cluster "Renewable Energy and Biofuel" (POLIBRE, see Section 3.3 of Piedmont regional report and Section 9.1.1 of this report) groups many SMEs that have competencies on this topic.

The SMEs involved in the development and application of **material technologies** (such as plastic materials) for automotive application and of **mechatronics systems** have clustered around the Innovation Pole for "Plastic Innovation" (PROPLAST, Section 2.1.1. of the Piedmont regional report and 7.4 of this report) and the Innovation Cluster "Mechatronics and Advanced Manufacturing Systems" (MESAP, decribed in Section 3.3 of Piedmont regional report and in the Section 9.1.1 of this report).

An increasing number of SMEs in Piedmont has been developing competences in the **connectivity** sector and has organized around the "PoloICT" Innovation Cluster (Piedmont regional report section 3.3) and the Istituto Superiore Mario Boella (Piedmont regional report section 2.1.1).

[3]CECOMP is an ME was founded in 1978. Its mission mission is to provide a wide range of dedicated services for the construction of style models and the small series production of complete new vehicles. CECOMP has been working as a partner of leading OEM for over 30 years, producing show and concept cars, style models and master cubing, handmade and pre-series prototypes for the testing phase, the development and the manufacture of dies, prototype assembly and production tooling. It is specialized in performing every kind of activity in the prototyping and pre-industrial phases

In order to promote Piedmont top-flightsuppliers abroad as a single supply chain, the Turin Chamber of Commerce launched in 2000 the project "**From Concept to Car**" in collaboration with the Foreign Trade Office (see Section 1.2 p. 17 of Piedmont regional report and Appendix A.1.2 Table A.d of this report).

7.4 Research Centres

Western Sweden region

In Western Sweden five main research centres are present:

a) **Chalmers University of Technology** (P.42 RR VGR, Sect. 3.8.1). The automotive activities of Chalmers are spread over the departmental structure, the different engineering centres and the different 'Areas of Advance'. The technical university has 17 departments. The main departments relevant to automotive research and development in the area of safe and green road vehicles are Transport, Energy, Materials, Production and Information and Communication Technologies. Chalmers hosts a number of engineering research centres, in the form of 'excellence centres' or 'competence centres', in relevant areas for the present study. These centres are primarily the Swedish Hybrid Vehicle Centre (SHC), Competence Centre for Catalysis (KCK), Combustion Engine Research Centre (CERC), Swedish Knowledge Centre for Renewable Transportation Fuels (f3) and Vehicle and Traffic Safety Centre (SAFER). The centres are described in chapter 9 "Cluster Initiatives".

b) **The Technical Research Institute of Sweden** - SP (P.48 RR VGR, Sect. 3.8.4). SP is a national research institute with headquarters and main facilities in Borås, 65 kilometres east of Gothenburg. The institute is accredited for calibration, testing, inspection and certification of products and management systems in several sectors, and is a notified body for approximately 25 different EU directives. Activities cover approximately 30 technology areas organised into nine interworking technical departments. Examples of multidisciplinary areas include electronics and IT, engineering and transport technology and environmental and energy technology. Within the automotive field, SP concentrates particularly on electric vehicles, active safety, lightweight designs, communication and alternative fuels.

c) **Viktoria Institute** (P.49 RR VGR, Sect. 3.8.5). Viktoria institute is a non-profit IT-research institute with headquarters in Lindholmen in Gothenburg. Viktoria Institute is focusing on automotive and transport informatics and employs approximately 40 researchers. Viktoria Institute is part of Swedish ICT, which in turn is part of RISE Research Institutes of Sweden. Viktoria Institute's mission is to contribute to sustainable and competitive growth and the development of the automotive and transport industry in Sweden. Viktoria focuses on applied research, development and innovation in collaboration with the industry, and acts as a bridge between academy and industry. The automotive competence area covers applied research with industry actors targeting IT applications and services that are based, or partly based, on in-vehicle computing and communication platforms. The five main application areas are cooperative systems, electromobility, open vehicle, sustainable transports and vehicle diagnostics.

d) **VTI** - the Swedish National Road and Transport Research Institute (P.50 RR VGR, Sect. 3.8.6). VTI is a government agency under the Ministry of Enterprise, Energy and Communications. VTI's principal task is to conduct research and development related to infrastructure, traffic and transport. VTI works with all modes of transport and the fields of pavement technology, infrastructure maintenance, vehicle technology, traffic safety, traffic analysis, people in the transport system, environment, planning and decision-making processes, transport economics and transport system. VTI has approximately 200

employees, and its head office is in Linköping, with branch offices in Stockholm, Gothenburg and Borlänge.

e) **SWEREA** (P.50 RR VGR, Sect. 3.8.7). Swerea consists of the parent company and five research institutes: Swerea IVF, Swerea KIMAB, Swerea MEFOS, Swerea SICOMP and Swerea SWECAST. Swerea IVF and parts of Swerea SICOMP are located in Gothenburg. SWEREA is owned by five owner-associations (53 percent) that represent approximately 450 industrial companies and by RISE Holding AB (47 percent), a Swedish state holding company for ownership of industrial research institutes. Swerea employs approximately 485 people and, through its institutes, is currently involved in 83 research projects financed by the EU Framework Programme or the RFCS (Research Fund for Coal and Steel). A key area is automotive technology. Swerea IVF specialises in product and production development, manufacturing efficiency and work organisation. Swerea SICOMP specialises in polymer fibre composites. One important topic for collaboration with the automotive industry is bio-composites.

Mov'eo (Paris region and Upper Normandie)

In Mov'eo cluster the key institutions (P.16 RR Mov'eo, Sect. 3.2.1) are represented by:

a) **IFSTTAR** (former INRETS: National Institute for Research on Transport and Safety). With 1250 employees, IFSTTAR conducts applied research and expert appraisals in the fields of transport, infrastructure, natural hazards and urban issues. Main research areas are: Mobility, energy and the environment; Transport system quality, safety and optimization; Transport and health (accident prevention studies, biomechanics, health); Energy and natural resource savings; Road safety and transport infrastructure modernization. The main laboratories involved in safe and green mobility activities are: LEPSI (Laboratory for road Operations, Perception, Simulators and Simulations); LIVIC (Research laboratory for advanced driving assistance systems); LVMT (Research Laboratory addressing the City, Mobility and Transportation); LTN (New technologies Laboratory dedicated to Power Electronics for transports); LPC (Laboratory of driver psychology)

b) **IFP ENERGIES NOUVELLES** (French Petroleum Institute). It is a public-sector research, innovation and training centre active in the fields of energy, transport and the environment. The centre has 1680 employees and 5 strategic priorities: Renewable energies; Eco-friendly production; Eco-efficient processes; Sustainable resources; Innovative transport.

c) **INRIA** (French National Institute for Research in Computer Science and Control). It is public research body with 3430 employees fully dedicated to computational sciences. The IMARA (Computer Science, Mathematics and Control for the Automated Road) project-team is a "horizontal" team at INRIA. Its objective is the coordination and the transfer of all the research done at INRIA which can be applied to the concepts of "La Route Automatisée".

d) **CEA** (French Alternative Energies and Atomic Energy Commission). The CEA is active in four main areas: low-carbon energies, defence and security, information technologies and health technologies. In each of these fields, the CEA maintains a cross-disciplinary culture of engineers and researchers, building on the synergies between fundamental and technological research. In Automotive research CEA focuses on Electronics, computer science, materials science, new energy technologies.

In Mov'eo cluster research is also carried out in cluster of excellence, Grand Ecoles and universities. The most releveant for SAGE scope (P.17 RR Mov'eo, Sect. 3.2.2) are: **Paristech** (cluster of excellence of Engineering and Business Schools), **Ecole Centrale de Paris** (Engineering School), **Supelec** (school of of engineering at the forefront of Energy and Information Sciences), **ESTACA** (Engineering school for transportation industry), **ESIGELEC – IRSEEM** (Embedded Electronic Systems Research Institute), **INSA Rouen**, **University of Versailles St-Quentin-en-Yvelines** (UVSQ), **University Pierre and Marie Curie** (UPMC), **University of Le Havre**, **University Of Rouen**.

Regensburg Cluster

In Regensburg cluster, the main research centres are the nine competence centers of the **University of Applied Sciences Regensburg** and the three technology campuses of the **University of Deggendorf** (P.13 RR Regensburg, Sect. 3.2.1). The research labs are clearly automotive dominated with presence of charging infrastructure and ICT competences. However, a lot of research activity is also done outside these labs with a focus on energy distribution, e-mobility and charging techniques, with a broad focus covering automotive, charging infrastructure and energy as the competences of the enterprises of the cluster.

The following table provides an overview of the Competence centers at UAS Regensburg research activities at the technology campi of the UAS Deggendorf related to e-mobility:

UAS Regensburg	UAS Deggendorf
IT operation center LaS³-Laboratory for Safe and Secure systems BiSP Regensburg-Biometrics and Sensor Technology Research center Competence Center Software Engineering (CCSE) Mechatronics Research Unit (MRU) Sensor System Application Center - SappZ New: Institute for Social Research and Technology Impact Assessment - IST Combustion engines and emission control laboratory School of Energy & Resources Multibody SystemsCompetence Cente	Technology Campus Cham • Mechatronic systems and industrial engineering • Sensor systems, robot systems • Control engineering Technology Campus Freyung • Optical technologies • GIS (Geo informatics) • RFID • Embedded systems • Bionic Technology Campus Teisnach • Industrial engineering • Process development and optimization for optical systems • High-frequency engineering

Piedmont region

Piedmont Region hosts many leading edge **private R&D centers** specifically focused on mobility research and innovation.

Centro Ricerche Fiat (CRF), founded in 1978, is an internationally renowned hub for leading-edge automotive technologies in the fields of ecological and safe mobility. With about 1000 researchers and specialized technicians CRF studies innovative mobility solutions through a large scope approach that includes vehicles, components, energy management, safety, telematics, mechatronics, innovative materials and related technologies, as well as innovative concepts in engine technology, alternative propulsion systems and transmissions.

General Motors Powertrain Engineering Center, founded in 2005, is responsible for the development of all diesel engines and controls for General Motors passenger cars and trucks around the world. It counts on over 480 people.

Magneti Marelli, founded in 1891,has in the region its R&D centers for plastic components & modules, suspension systems and exhaust systems.

Mizar Swarco, founded in 1981, is specialized in the design, development and implementation of advanced telematics systems. It has a strong reputation in Europe for its expertise in traffic management, public transport management, traveler information services and for OMNIA the “open platform designed to offer an easy and intuitive access to a wide range of ITS applications".

Many **public research centres** are also located in the area around Torino.

The duty of**CNR - National Research Council**is to carry out, promote, spread, transfer and improve research activities in the main sectors of knowledge growth and of its applications for the scientific, technological, economic and social development of Italy. In Piedmont there are 14 research institutes and four of them are concentrated in the Torino area (http://www.area.to.cnr.it) along with the **National Metrologic Insitutute** (INRIM: http://www.inrim.it/index.shtml). Those of interest for the automotive field are the Institute of Science and Technology of Ceramic Materials (ISTEC: http://www.to.istec.cnr.it) and the Institute of Electronics and ICT Engineering (IEIIT: http://www.ieiit.cnr.it/to/).

CSP – Innovation in ICT (www.csp.it) is the regional research body in the field of information and communications technology.Its shareholders are: Regione Piemonte, CSI-Piemonte, Politecnico di Torino, Università degli Studi di Torino, Comune di Torino, Unione Industriale di Torino, SISVEL S.p.A. and IREN Energia S.p.A CSP is a research laboratory accredited by the Italian Ministry of Education, Universities and Research, with UNI EN ISO 9001:2008 certification.

ENEA is the name for Italian National Agency for New Technologies, Energy and Sustainable Economic Development. In Piedmont region ENEA has the Saluggia Research Centre (http://www.saluggia.enea.it/) which, amongst the other topics, focuses on the experimental characterization of liquid biofuels (biodiesel and vegetal oil).

The**Istituto Superiore Mario Boella** (ISMB:www.ismb.it) is a R&I centre operating in the ICT domain. The mail research areas of ISMB are: Navigation Technologies, Pervasive Technologies, Multi-Layer Wireless Solutions, Photonics, Information System Architectures & SW Technologies, Information Management and Innovation Development.

The**Laboratorio Accreditato Prove** (LAP: http://lap.telecomitalia.it) is the innovation centre of Telecom Italia, offers testing services on ICT equipment and platforms. Using advanced labs and test plant infrastruc-ture, LAP works both for the internal departments of Telecom Italia and for external companies in ICT sector.

The PROPLAST:(www.proplast.it) is a research consortium with the aim to promote the plastic culture. ProPlast is specialized in the fields of polymeric materials engineering and engineering product and process. It aims to support businesses in the field of applied research, technological innovation, selection and training of human resources.

The**Higher Institute on Territorial Systems for Innovation** (SiTi:www.siti.polito.it)is an association, formed between Polytechnic of Turin and Compagnia di San Paolo, that conducts research and training oriented towards innovation and to socio-economic growth. A specific research area on transport and logistic is present with competences about traffic models and analysis.

7.5 University and Education

Western Sweden region

The main universities **in Western Sweden** whose educaiton programmes offer course in the automotive (or automotive-related) sectors are:

a) **Chalmers University of Technology** (P.42 RR VGR, Sect. 3.8.1). Approximately 14,000 people work and study at Chalmers University of Technology, ofwhom 2500 are employees. The university offers PhD and licentiate programmes, as well asMScEng, MArch, BEng and nautical programmes. Approximately 6400 students (FTE) are inprogrammes that lead to approximately 1300 master's degrees annually. An estimated 1100students are involved in doctoral programmes, creating 250 PhDs and licentiate thesis degreesannually. Between 2002 and 2009, a total of 1236 PhDs graduated from Chalmers. The thematic technology area of automotive engineering and communication and energy is related to approximately 30 master programmes at Chalmers University of Technology. Chalmers University of Technology has developed a master's programme specifically for the area of transportation, **CATA – Chalmers Automotive and Transport Academy** – a joint interface between Chalmers and the automotive and transport industries that serves as a platform for contacts and a forum for mutual exchanges between Chalmers and its industrial partners. The three aims of CATA are to stimulate work-integrated learning, to secure future competency needs through interaction between Chalmers, industry and society and to align higher education with work-integrated learning. **Chalmers Professional Education (CPE)** is Chalmers University of Technology's organization that offers tailored education to industry professionals.

b) **University of Gothenburg** (P.46 RR VGR, Sect. 3.8.2). It is the major general university in the region, offering the most comprehensive range of courses and degree programmes in Sweden for its 38,000 students. The university employs 5900 individuals, 2700 of whom are teachers and doctoral students and 490 are professors.

c) **Other universities** and colleges are present in the region (University of Borås, University of Skövde, University West). A detailed description can be found in P.47 RR VGR, Sect. 3.8.3.

Mov'eo (Paris region and Upper Normandie)

The most important education insitutions **in Mov'eo cluster** were already mentioned in the previous section: **Paristech** (cluster of excellence of Engineering and Business Schools), **Ecole Centrale de Paris** (Engineering School), **Supelec** (School of of engineering at the forefront of Energy and Information Sciences), **ESTACA** (Engineering school for transportation industry), **ESIGELEC** (Embedded Electronic Systems Research Institute), **IFP School**, **INSA Rouen**, **University of Versailles St-Quentin-en-Yvelines** (UVSQ), **University Pierre and Marie Curie** (UPMC), **University of Le Havre**, **University Of Rouen**. It is worthwhile recalling here that in France there is a dual system in which you can receive higher education either in Universities or in "Grandes Ecoles". Depending on the discipline it is taught in both like Mathematics or Chemistry or only in Universities like Law or Medicine. If you want to enter a "Grande Ecole" you have to attend a preparatory class and then go through a competitive examination. On the other end to enter a University you need the end of High School exam "Baccalaureat" and you have a curriculum to License then Master and PhD (European LMD system). The "diplôme d'ingénieur", (equivalent to a Master of Engineering) is accredited by the Commission des Titres d'Ingénieurs, created in 1934.

Regensburg Cluster

The most important education institutions in **Regensburg and Eastern Bavaria** connected to the cluster are:

a) **University of Regensburg** (UR): 20,000 students, 360 professors, 11 faculties
b) **University of Applied Sciences Regensburg** (UAS Regensburg): 8,000 students, 200 professors, 8 faculties
c) **University of Applied Sciences Deggendorf** (UAS Deggendorf): 4,600 students, 100 professors, 5 faculties

Education activities related to SAGE scope are present in UAS Regensburg and UAS Deggendorf. The Facultieswith special relations to electro mobility are Mechanical Engineering, Electrical Engineering and Information Technology, Computer Sciences and Mathematics in **UAS Regensburg** as well as Electrical Engineering and Media Engineering, Mechanical Engineering and Mechatronics in **UAS Deggendorf**. E-mobility related study courses (Master in Electro Mobility and Energy Distribution Systems; Bachelor in Sustainable Energies and Energy Efficiency) are present in **UAS Regensburg**, whereas shared study courses with special attention to automotive, electro mobility and vehicle safety are offered at both universities (Master in Automotive Electronics: advanced vocational training).

Piedmont region

As far as education in fields related to SAGE scope is concerned, **Politecnico di Torino** (POLITO) is the main stakeholder in Piedmont. POLITO provides 32 MSc degree courses, 24 Ph D courses and 40 Post graduate programs. In 1999 POLITO and CRF instituted the BSc and MSc programs in Automotive Engineering (also given in English since 2006), which focus on environmentally friendly powertrains and chassis design. They also offer interdisciplinary competences including advanced design and manufacturing methodologies, industry development processes management, and target achieving processes. Piedmont regioncan also draw on the capacities of the **COREP consortium** for continuous education, consortium for computational technologies (TCN), SAFI, as well as professorships from Industry (CRF), Science Centres (see section 7.4 of this report), Technology Parks (see section 9.4 of this report and Section 1.3 of Piedmont regional report) and other Universities (such as **University of Torino**, Bocconi University and Politecnico di Milano) already well connected

with POLITO to cover all technical, environmental, social and economic aspects. As a whole, Piedmont region involves over 4500 students annually within the specific education fields directly relevant for SAGE, including entrepreneurial and interdisciplinary educations, and features a network of international relations (almost 100 double degree partnerships with EU and non-EU universities; active participation in several international university networks, such as CLUSTER, COLUMBUS, PEGASUS, TIME, ECIU; establishment of international campuses, such as the Sino-Italian campus of Tongji University in Shanghai). The long tradition of inviting industry and commercial actors to participate in the design and provision of education (such as the long term collaboration between CRF and POLITO and the involvement in education of Brembo, Pirelli and GMPT-E) supports the region capacity to design new education of relevance for SAGE project.

The extended university campus of Politecnico (the **Cittadella Politecnica**) hosts an open innovation centre integrating research, education and innovation that acts as a colocation centre fort he whole cluster.

Automotive Engineering education in Torino cluster

Fiat Group and POLITO have been collaborating since 1999 for the establishment and joint management of BSc and MSc in Automotive Engineering. Such a cooperation has been financially supported by Fiat group until 2011. In 2011, a new framework agreement has been subscribed to promote strategic mid-long term cooperation for education, research and innovation in the specific sector of mobility and road vehicles (see also Section A.1.6 and the document in the Annexes). The general agreement explicitly mentions the cooperation for the BSc and MSc in Automotive Engineering and the aim to expand such national programs to include partner universities from other countries and to attract students from Europe and third-countries. In addition, a specific agreement for Automotive Engineering education programs has been signed, where FIAT commits itself to financially support: selected MSc courses offered by POLITO and by professorship from industry; the establishment of a Voluntary Education Program (VEP), that will offer new courses (selected by students on a voluntary basis) to complete master students education on priority topics for industry (VEP courses will also include Virtual Engineering courses in order to promote the knowledge of the most recent analysis and simulation tools); student teams involved in international and national competitions; student scolarships for internships and final thesis, that will be carried out within joint research projects FIAT-POLITO identified according to a new integrated approach for research and MSc thesis. FIAT also commits to cooperate on continuously improving and updating didactic material for MSc in Automotive Engineering and promote internationalization of Automotive Engineering through FIAT global network. The first example of this last commitment is represented by the double degree program in Automotive Engineering between POLITO - University of Windsor (CAN), that started in 2011 with scholarships from Fiat Group and Chrysler.

In 1997, POLITO, Piemonte Region (Technology Park - Envypark), the Warsaw University of Technology (WUT), the Silesian Technology University of Gliwice (STU), the Technical and Humanistic University of Bielsko Biala (ATH) along with CRF and the Fiat sectors active in Poland, started the “Science and Technology Program”. The Cooperation promotes Education in the field of automotive engineering, Professors and Students exchange, joint European Research Programs and specific research programs promoted by Fiat. Fiat awards are assigned every year to 18 best automotive thesis (Master and PhD) selected by Polish Universities. The main area of cooperation has been the research and demonstration of innovative Electric-Hybrid powertrains for urban vehicles; technical papers, books, patents and prototypes document the results of this long term program. A recent initiative of this program is the start-up of the Centre for Electric/Hybrid vehicles in Poland to support

electric technologies transfer, to promote fleet demonstration programs and to assess policies impact on CO2 transport emissions.

POLITO is member of the Institute of Automotive Research and Education (IARE) of Torino (see also Section A.1.6 and the memorandum of understanding in the Annexes). The initiative (started in 2009 in cooperation with GMPT-E) aims at developing and delivering world-class research and education with the strategic focus on future alternative power trains, to reinvent the automobile for the 21st Century. The main objective of the initiative is to increase awareness and appreciation of the Institute initiatives among: Politecnico di Torino students, faculty and staff, automotive industry employees, government at all levels, other universities and alumni and general public. The Institute architecture is based on three main pillars: advanced power train strategic partnership, partners for the advancement of collaborative engineering education and education initiatives. It also allows a direct link with the other two IAREs existing in the world (IARE of University of Michigan in US; IARE of Shanghai Jiaotong University in China). Within IARE framework, POLITO is also a member of PACE (Partners for the Advancement of Collaborative Engineering Education) that links GM, Autodesk, EDS, HP, Siemens PLM Software, Sun Microsystems and their global operations, to support selected academic institutions worldwide to develop automotive product life-cycle management.

Internationally recognized laboratories at POLITO

With reference to internationally recognized laboratories, POLITO has active institutes in the field of Automotive Engineering. The “Internal Combustion Engines – Advanced Laboratory” (ICEAL) and the “Fluid Power Research Laboratory” (FPRL) at Energy Department, the “Laboratorio Interdipartimentale di Meccatronica” (LIM: Inter-Departmental Mechatronics Laboratory) as well as the Laboratory of Dipartimento di Meccanica e Aerospaziale (Department of Mechanics and Aerospace), feature highly specialized and unique test facilities (e.g. 5 high-dynamic and steady-state engine test rigs; measuring systems for the analysis of raw and diluted engine emissions in steady-state and transient operation; hydraulic test beds for the characterization of high-pressure injection systems; test benches for automotive transmissions) and self-developed measurement, testing and simulation procedures. All these laboratories have strong industrial cooperation and promote and put into effect the technology transfer of research activity results to concerned enterprises, regularly leading to patents and prototypes.

8 Road Transport Sector Public Policies: Support Measures for Innovation and for Technology Development

This chapter describes the main public support policies for R&D and innovation-related activities in the SAGE regions. These policies have been classified in:

- national and regional Supporting Measures for Innovationand for the development of the regional innovation system
- national and regional Supporting Measures for Technology Development

The first type of measures can cover one ore more of the following categories:

1) Boosting competitiveness and innovation in SMEs
2) Boosting innovation in Public Research Organizations
3) Encouraging Innovation in Education
4) Implementation of action plans, public policies and strategies
5) Platforms and science parks
6) Measure to promote cluster

The National and Regional Supporting Measures for Technology Development can cover one ore more of the following focus areas:

1) Green
2) Safety
3) Connectivity
4) New Business Models and Mobility Services (NBM)

The Green focus area includes the vehicle technologies needed to meet the requirements for energy saving, diversification and decarbonisation as well as for the reduction of pollutant emissions.
The Safety focus area covers all actions related to the improvement of road safety of the vehicle, of the infrastructure, a better driver behavior, and the organization of the transport system. All different types of safety (cooperative-preventive-active, passive and after crash) are considered, within an integrated approach.
The Connectivity focus areas considers the V2V and V2I communications, which are enabling factors for making road traffic more safe, environmental friendly and more comfortable.
The New Business Model and Mobility Services (NBM) focus area is a cross-cutting area that concentrates on the impacts of the new technologies on markets, businesses and future mobility.

The analysis is based on the information and data reported in the Regional Reports (D2.1). The aim is to collect and describea preliminary list of the public initiatives that are relevant for each SAGE cluster rather than to give an overview of all the public policies related to the transport sector in each nation and region. Nevertheless, the results have been organized in order to provide a starting point for the working group that in WP4 will have to identify the funding opportunities for the activities in the SAGE Joint Action Plan.

French national agencies promote both technology-related programmes and strategic supporting measures for innovation. As a matter of fact, in the Paris/Upper Normandy regions, technology-related programmes are mainly supported by the French national government but regions have a more and more important role to play. They have their hown programmes and are frequently sollicitated to co-fund the national programmes.
The federal government in Germany mainly focus on setting the innovation-related framework and providing funds for supporting industry-academia linkages, whereas the Bavarian government usesits regional capabilities, resources and infrastructure in support of research and innovation depending on individual circumstances. Bavarian government implement a variety of specific research, technology and innovation policy funding measures that take into account regional economic and technological characteristics and complement existing federal measures. As a result, Bavaria can have funding measures in the same context as the federal government initiatives, but with differences in the emphasis.
Swedish national agencies manly promote technology-related programme, whereas measures to support innovation are mainly promoted by regional governments.
The regional inventory data from Piedmont (Italy) highlights the central role of regional authorities in both supporting innovation and technology-related programmes.

8.3 Support Measures for Innovationand for the development of the regional innovation system

In general, in each cluster all the six categories in which these support measures have been organized are covered by specific supporting measures (national or regional programmes). A significant share of public programmes to support clusters, networking platforms as well as innovation and competitiveness of SMEs is present in all clusters. As far as the measures to encourage innovation in education are concerned, both regional and national programmes are present in Bavaria, and the national program “Initiative for Excellence to Promote Institutions of Higher Education” features a big investment in this topic (around 2,7 GEuro).
In Mov’eo cluster, national programmes are usually predominant predominant (with a increasing role played by regional authorities), whereas in Piedmont cluster the regional authorities play a major role in supporting innovation.
In what follows we will mainly focus on the measures to promote clusters.The specific initiatives launched within these cluster and technology platform programmes are thenpresented in chapter 9 “Cluster initiatives and collaboration platforms”.

Measures to promote clusters

In France and Italy cluster development is equally promoted by national and regional governments, whereas in Regensburg the programmes to promote clusters are only or mainly issued by the regional authorities. In Western Sweden Sweden the main funding for clusters have come from the national agencies Vinnova and Tillväxtverket and the Region Västra Götaland, often in cooperation. Region Västra Götaland has invested heavily in the infrastructure of the six science parks in the region of which two are specifically aimed towards the automotive sector. Region Västra Götaland also funds the cluster platforms Business Region Göteborg and Automotive Sweden. Funding for the PPP research centres hosted by Chalmers is primarily national (Swedish Energy Agency, Vinnova).

Western Sweden

In Western Sweden the main measure to support cluster was represented by the 3-year regional programme "**InMotion**" (Collaborative actions for environment, energy and sustainable transport) launched in 2009. Its focus was initially the automotive and transport industry, but this focus gradually shifted to include energy and cleantech. The objectives were to stimulate triple helix cooperation, to support the development of new products and processes and to strengthen the regional infrastructure for testing and demonstration. The largest single project financed by InMotion was **ASTA** - Active Safety Test Arena, described in Chapter 9 of this report.

Mov'eo (Paris region and Upper Normandie)

In France the **Competitiveness Clusters** programme started in 2005 with the aim of developing competitiveness clusters. The selected projects cover both emerging technological fields such as nanotechnology, biotechnology and microelectronics and existing areas such as the automotive and aerospace industries. 946 MEuro have been invested by the French Government since 2005 for R&D projects, with significant co-financing from regional authorities. In Paris/Upper Normandy regions the programme has promoted nine competitiveness clusters, five of which (Advancity, Cap Digital, Mov'eo, Systematic Paris Region and Novalog) are related to Green and Safe Road Transport. In particular, Mov'eo activities focus on automotive industry, mobility, public transport and road safety (see Chapter 9).

Regensburg cluster

In Bavaria region, the main national program related to cluster promotion is "**Top Cluster Competition**", with a budget of 600 MEuro in 10 years. It aims at supporting projects (R&D, demonstrators, development of new forms of co-operation, training and promotion of young talent) performed by cluster members. The two regional programs "**Bavarian Cluster Alliance**" and "**Cluster Automotive**" support the building up of cluster platforms in Bavaria.

Piedmont region

It is worthwhile pointing out that the national cluster supporting initiatives are relatively recent in Italy and Piedmont region, where the **National Cluster Programme** has been launched in late 2012. This programme aims at establishing and developing national technological clusters in the following areas: Green Chemistry; Agrifood; Ambient Living Technologies; Life Sciences; Smart Communities' Technologies; Means and Systems for Terrestrial and Marine Mobility; Aerospace; Energy; Smart Manufacturing.

Amongst the regional measures to support clusters in Piedmont, it is important to mention the **Technology Platforms** and the **Innovation Clusters**.

The Technology Platforms represent an integrated and coordinated research actions that foster the joint participation of a plurality of actors in various roles in research and innovation (especially research centers, enterprises, universities, Science and Technology Parks), united by the goal of achieving integrated actions within a common trajectory of technological development. Within this context, the **Automotive Technology Platform** has recently been launched (see chapter 9 "Cluster initiatives and Collaboration platforms" in this report) and the first six initiatives will start in 2013.

The **Innovation Clusters** are networking among companies (innovative start ups, SMEs,…), private and public research bodies or institutes and other operators. Reflecting the strengths of the territory, each Cluster,

coordinated by a management authority, is identified around a specific technological sector/domain within a definite geographic area of reference.
With the support for Clusters (through dedicated financial Measures) the Region aims to foster the development of the companies' R&I activities, the adoption of innovation, the sharing and valorization of know-how and the support competitiveness of SMEs through the use of common infrastructures and through the exchange of knowledge and experience. The Clusters also seek to encourage the internationalization process and the attraction of foreign investments. 12 Innovation clusters are currently active, 10 of which (PoloICT, Polo Innovazione Lago Maggiore, Polight, Ibis, Mesap, Enermy, New Material Innocation Pole, Polibre, and Proplast) are related to Safe and Green Road Transport and are described in chapter 9 "Cluster initiatives and Collaboration platforms".
In the framework of Structural Fund EU Programmes launched in 1994-1999 and 2000-2006, Piedmont region created the **Science and Technology Regional Parks**, closely linked to Politecnico di Torino and University of Torino, with the mission of facilitating the establishment in the region of technology companies, collecting the needs of companies, supporting R&I and fostering technology transfer. Over the years, six Technology Parks have been ceated (Bioindustry Park, Environment Park, Technology Park of Valle Scrivia, Tecnogranda, Technology Park of Lago Maggiore, Virtual reality and Multi Media Park; those of interest for SAGE scope are decribed in chapter 9 of this report). More recently, with the Regional law 4/2006, Piedmont Region launched a new plan to make the mission of Technology Parks more coherent with the evolution of the structural characteristics of the industrial Piedmont system. According to this plan each Technology Parks has become the managing authorities of one Innovation Cluster, i.e. 6 of the 12 Innovation Clusters are currently manged by one Technology Park.

8.4 Support Measures for Technology Development

Western Sweden and Mov'eo region show a prevalence of national investment in the technology-related programmes, whereas the opposite occurs for Piedmont cluster where funding for technology-related projects mainly come from the local government.

At consortium level supporting measures are addressed to all the SAGE focus areas. However, most of the programmes reported in the regional are concentrated on the Green focus area, which covers a very broad spectrum of technologies.

The database collected in the regional reports mainly focuses on national and regional funding opportunities and does not include in a systematic way other funding measures (such as EU funds and research projects supported by private companies or PPP partnerships).

Based on this data, it appears that **Western Sweden** and **Piedmont** have a strong and long-term commitment in bioethanol, biogas and **alternative** gaseous **fuel production** (Green area). In Sweden this includes significant investments to promote the **related infrastructures and demonstration in public transport** (National program "Processes in ethanol production" and Regional program "Biogas west"). In **Germany**, a national programme is focused on **hydrogen infrastructures and fuel cell technologies**.

Vehicle electrificationand **rational use of energy** in mobility and transport systems is addressed by all clusters in terms of Green technologies. However,**electro-mobility** is a clear **priority for Bavarian state and City of Regensburg**, whereelectromobility-related programmes are present in all the focus areas and theNational programs “Förderrichtlinie Elektromobilität” (directive electro mobility) „ approaches this thematic area from the point of view of both Green technologies (System efficiency and Infrastructures) and New Business Model.

9 Cluster Initiatives and collaboration platforms

This chapter analyses the relevant initiatives related to the automotive sector started in each cluster. These actions include cluster initiatives, research centres and strategic working groups that review and improve the key topics relevant for the clusters (Section 9.1) as well as the main collaboration platforms and cross-cutting projects (Section 9.2) that can produce new initiatives in specific technology areas.

9.1 Cluster initiatives, research centers and cluster strategic topics

The initiativeshave been classified according to the SAGE focus areas introduced in section 8.2:

1) Green
2) Safety
3) Connectivity
4) New Business Models and Mobility Services (NBM)

The initiatives considered in this report involve the three 'triple-helix' groups in the regions (firms, government and the research community/academia) and are described in Sections 9.1.1-9.1.4 and listed in Tables 9.a – 9.d of this chapter, one per each focus area.

The cluster initiatives are usually initiated by a regional authority.However, some examples promoted at national level canbe found. In Sweden the national FFI programme is not only an important funding source for existing cluster initiatives (CERC, KCK and SHC, see section 9.1.1) but it is also in itself an organizational activity that gathers key persons involved in technical R&D in industry, government and academia. In Regensburg the cluster initiative "Intelligent Charging Infrastructures" has been funded by ZIM-NEMO program from the ministry of economic affairs since October 2011.

9.1.1 Green

The analysis of the initiatives reported in Table 9.a shows a strong commitment in technology sectors related to **Powertrain and Energy Technologies** and **Green Production**.

In Piedmont region, the Automotive Platform has collected a broad cluster of OEM (Fiat Powertrain and Iveco), research centres (CRF, GMPT-E and Politecnico di Torino), LE (Bitron, Dayco, FEV Italia, Rockwood Italia), SMEs (about 100 companies), and Technology Parks (Environment Park) to work together on topics like:

- Engines with low environmental impact
- Electrification of the vehicles propulsion
- Hybridization of propulsion systems and energy sources
- Small diesel engines with high efficiency
- Technologies for very low pollutant emissions
- Reduction of losses and energy recovery on board the vehicle for improving energy efficiency

- New materials for the lightening of the weight of the vehicle and for the improvement of supply logistics.

Piedment Region has launched six specific 3-year projects this year with an investment of 30 MEuro. The projects are led by CRF (2 projects), Iveco, GMPT-E, Rockwood Italia and Bitron. Politecnico has been involved in all the projects.

Another example of cluster initiative that covers more than one of the abovementioned sectors is the national **FFI – Green Vechicle Programme** in Western Sweden (already mentioned in Section 9.1), that focuses on Energy Technologies and Green Production.

In Piedmont Region the whole sector Green Production is also addressed by two **Innovation Clusters**: **Innovation in New Materials** and **Mechatronics and Advanced Manufacturing (MESAP)**, whereas the sector Energy Technologies is addressed by the Innovation Clusters**ENERMHY**and **Lago Maggiore**.

In Mov'eo the sector Energy Technologies is covered by many strategic topics, such as **Demonstration of Low CO2 vehicles DAS DVD** (that focuses on the reduction of parasitic losses related to aerodynamic profiles), and **ICE Powerterains DAS CTT** (that focuses on thermal management and waste heat recovery).

Other broad cluster competences are related to the Mechtronic technology area and are mainly present in Mov'eo (Strategic topic **Mechatronics Systems DAS-SME**) and in Piedmont (again the **MESAP** innovation cluster). With reference to the automotive field, these cluster initiatives focus on subsectors as energy harvesting and recovering systems and robustness and reliability of mechatronic systems.

Regensburg has promoted Green cluster initiatives on smart-grid and charging infrastructure (the thematic groups **Intelligent Energy Management/Smart Grids** and **Intelligent Charging Infrastructure**), which can also be classified in the area Connectivity.

Many other cluster initiatives still related to the **Powertrain and Energy Technologies** and **Green Production**sectors are present in SAGE consortium. However, they are focused on more specific subsectors.

For instance, specific cluster initiatives in the subsector Electrified drivetrains are present in Western Sweden, where the **Swedish Hybrid Vehicle Centre** has specific activites on new concepts for electrical machines and drives, energy storage systems and energy management of on-board electric/thermal machines for HEV applications. Other strong cluster competences within this subsector are also present in Mov'eo (the Strategic topic **Energy Storage Systems DAS SSE** focuses on the development and characterization of components and materials for the cells/modules of the batteries, on the battery management system and its integration in the vehicle as well as on the study of the interface between grid and vehicle; however, many other Mov'eo strategic topics have also a specific focus on different aspects of electrified powertrains), Regensburg (the thematic group **Powertrain**, which mainly focuses on electric powertrains) and again in Western Sweden where the **Competence Center for Catalysis** develops materials for fuel-cell electrodes.

In the subsector Internal Combustion Engines, the **Combustion Engine Research Centre** and the **ICE Powertrains (DAS CTT)** Strategic topic are examples of cluster initiatives/specific competences in Western

Sweden and Mov'eo, respectively. The thematic group **Powertrain** in Regensburg also works on this topic, but with a focus on ICEs for HEV applications.

Many cluster initiatives in Western Sweden and Piedmont Region focuses on the production of alternative fuels for automotive application from biomasses and their use in vehicles. In Piedmont region three **Innovation Clusters** (**POLIGHT**, **IBIS** and **POLIBRE**) have specific competences on this topic and in Sweden two ongoing cluster initiatives (the **Swedish Knowledge Centre for Renewable Trasnportation Fuels** and the **Competence Centre of Catalysis**) are related to this technological area.The Strategic Topic **Demonstration and Low CO2 Vehciles (DAS DVD)** of Mov'eo has also a specific focus on alternative energies (H2, NG) for power supply systems and on the related recharging systems.

In the subsector Exhaust Aftertreatment Systems, the **Competence Centre of Catalysis** and the **ICE Powertrains (DAS CTT)** Strategic topic are examples of cluster initiatives/specific competences in Western Sweden and Mov'eo, respectively.

Finally, a significant number of the cluster inititiaves reported in Table 9 is also linked to sustanaibility assessment and demonstration of green technologies. Examples are the strategic topics **Vehicle Environmental Foorprint DAS EEV** and the **Demonstration and Low CO2 Vehicles DAS DVD** of Mov'eo.

Table 9.a: Cluster Initiative – Focus Area: Green

WESTERN SWEDEN		
Name	**Funding organization**	**Description**
Swedish Knowledge Centre for Renewable Transportation Fuels (f3) P.54 RR VGR, Sect. 4.1.1.	National and regional	Turnover is 21 MSEK/year (started in 1995). Technical focus is on biofuels and primarily *bioethanol* and *biogas*.
FFI – Green vehicles programme areas P.56 RR VGR, Sect. 4.1.6	National	On the one hand, FFI is an important funding source for CERC, KCK and SHC. On the other hand, it is also in itself an organizational activity that gathers key persons involved in technical R&D in industry, government and academia. The FFI programme and board structure for the areas of Energy & Environment and Transport Efficiency have a direct focus on green vehicle technology; in addition, both Production Technology and Vehicle R&D organize research and innovation that are indirectly relevant to the green theme. The production technology theme includes manufacturing aspects of new materials, and the vehicle R&D programme includes collaborations on the development of manufacturing techniques needed for a new generation of vehicles.

Competence Centre for Catalysis (KCK) P.54 RR VGR, Sect. 4.1.3.	National	Turnover is 21 MSEK/year (started in 1995). The technical focus is: (1) Analysis of the exhaust gases of vehicles. The aim is to develop and enhance the methods for *reduction of NOx in oxygen excess (application to diesel- and lean-burn engines)*. At present there are three main concepts to deal with this problem: i) NOx storage and reduction catalysts, ii) continuous catalytic reduction of NOx iii) Selective catalytic reduction of NOx with urea or ammonia. (2) *Catalytic reduction/oxidation of fuels in low-temperature exhaust gases* (from more fuel-efficient engines). (3) New catalytic materials. i) *Catalytic techniques for transformation of fossil and biomass* based feedstocks to fuels, like biogas, alcohols, ethers and synthetic diesel. ii) Development of *new effective and stable electrodes for fuel cell applications*. Techniques *based on catalysis* can be used both for energy supply and increased energy effectiveness as well as in energy transfer processes. Fuel cells is one example of energy transfer applications, where nano-technology and electro-chemical catalysis are combined in the, which both reduce the need for expensive precious metals and increase the life-time of the electrodes. iii) *Photo electro-chemical solar cells*.
Combustion Engine Research Centre (CERC) P.54 RR VGR, Sect. 4.1.2	National	Turnover is 21 MSEK/year (2,44 M€ started in 1995). The technical focus is: Technical focus of the centre is *combustion modelling* and computer simulation, *flame propagation anddiagnostics*, advance engines, especially *direct injection engines*, and

		pertinent *engine control systems*.
Swedish Hybrid Vehicle Centre (SHC)P.55 RR VGR, Sect. 4.1.4	National	Turnover of the two first phases is 97, 5 MSEK (2007-2010) and 97,5 MSEK during 2011-2014. The technical focus of the centre are: (1) **'System studies and tools'**, with the aim to develop adapt and assess methods supporting *virtual development of hybrid electrical vehicles* based on mathematical models of components and subsystems; develop, adapt and assess *methods and algorithms for modeling, monitoring, control, and optimization of hybrid systems*; and to jointly with the other research themes of SHC create a *platform for model based system studies*, based on the research results from all SHC areas; a vital part of this is to support the creation of the SHC Simulation platform. (2) The SHC research theme on **'electric machines and drives'** aims to develop and collect knowledge on electrical drives to support engineers in the Swedish automotive industry and to develop design, production technology and methods based on the *best material* and *control methods* available. (3) Important areas of interest in the research theme **'energy storage'** are: i) battery management, state-of-charge and health monitoring, thermal management, ii) lifetime expectancy, degradation mechanisms, failure modes, iii) system performance models, iv) battery production based on in-house research on active materials, electrolytes, electrode v) cell design and production technology.

LIGHTer P.53 RR VGR, Footnote 62.	National	It is an engineering competence centre located outside the region (link with innovation platform Innovatum in Trollhättan). The regional integration of this newly started initiative is somewhat weaker; however it is relevant and interesting in the sense that it represents knowledge transfer between on the one hand aerospace industry (Volvo Aero and SAAB Aeronautics) and on the other side the heavy vehicle and automobile vehicle industry. Regional partners of LIGHTer include road vehicle industry, institute Swerea AB and the regional innovation platform in Trollhättan, Innovatum technology. The primary technical university partners in the LIGHTer collaboration 'arena' are from outside the region (KTH in Stockholm, and Linköping Institute of Technology).
PARIS AND UPPER NORMANDIE (Mov'eo Region)		
Name	**Funding organization**	**Description**
MOV'EO STRATEGIC TOPICS: **Vehicle Environmental Footprint (DAS EEV)**P.31 RR Mov'eo, Sect. 4.1.4.	Mov'eo	**Materials & Weight Reduction**: Architecture, Materials and processes, Multi-material assemblies. **Health Interactions**: Processes, Air quality, Treatment of emissions, Local pollution, Odours, Insulation and noise, Electromagnetic waves / EMC. **Eco-Design**: Life Cycle Analysis, Resource management, Bio-materials, Waste management, Recovery and recycling. **Methodologies & Tools:** Decision-making tools, Product Life Management (All environmental footprint parameters), Systems and materials definition, Measurement and classification, Databases, Design Tools: Modeling, Optimization, Simulation
MOV'EO STRATEGIC TOPICS: **Demonstration and Low CO2 Vehicles (DAS DVD)**	Mov'eo	**Development and assessment of demonstrators**: Experimental deployment of carbon-free vehicles, Integration of new electrical and hybrid Powertrains and their interfaces in the vehicle: EV, HEV, PHEV, range extender, FCV), New vehicle architectures (wheel motor,

P.31 RR Mov'eo Sect. 4.1.3		dedicated platform, seats, boot…). **Demonstration of Vehicle / Infrastructure Interactions**: Power supply systems for low CO2 emission vehicles, alternative energies H2, NGV (station, cylinder exchange). **New "mobiles"**: Development and demonstration of specific vehicles: innovative « urban » vehicles, Niche markets, Small public transport vehicles. **Vehicle Dynamics**: Aerodynamics, Rolling resistance, Dynamics and safety (suspension, steering, braking and related active systems), New lightweight architectures. Example of R&D Project: **MOOVILLE: New urban vehicle for multi-applications.** P.36 RR Mov'eo, Sect. 4.3.2.
MOV'EO STRATEGIC TOPICS: **Energy Storage Systems (DAS SSE)** P.32 RR Mov'eo Sect 4.1.5	Mov'eo	**Development and characterization of components**: electro-chemicals and materials on the cells or modules, Study of Aging Processes, Digital Simulation, Diagnosis and 1st level active and passive control, Packaging of modules (stacks), Other storage systems (mechanical, pneumatic, hydraulic…) **Integration and Management of the system in the vehicle**: Battery Management system (BMS): Thermal management system, Storage System Architecture, Loading/Unloading Strategy, Coupling with the charger/inverter **Charging Infrastructure**: Interfaces with charging terminals (communication protocol), Development of new standards, Qualification of infrastructures, Smart management of recharging according to the grid **Life Cycle and qualification tools**: Development of tools and means of testing performance and reliability, Certification, Supply and availability of materials, Second life of batteries
MOV'EO STRATEGIC TOPIC: **ICE Powertrains (DAS CTT)**	Mov'eo	To develop and improve low CO2 powertrains using thermal engines, in compliance with changes in international regulations Powertrain architecture

P.33 RR Mov'eo, Sect. 4.1.7		Combustion, after-treatment and fuels Management and recovery of thermal energy Powertrain Digital Engineering Example of R&D Projects (Sect. 4.3.2): **FLOWER: New Variable Combustion Ration (VCR) Engine.** P.37 RR Mov'eo. **RENOTER: Engine heat recovery by thermoelectric power generation.** P.37 RR Mov'eo.
Mechatronics Systems (DAS SME) P.32 RR Mov'eo, Sect. 4.1.6	Mov'eo	**Technological Concepts and Innovatory Materials**: Assembly in three dimensions of active and passive components in mechanical part, integration of constraints due to power electronic, High power density cooling systems, Automotive stress: CEM, vibration, temperature…, Viable and competitive industrial processes, New means of Testing, Procedures and standards **Automotive Mechatronic Applications**: New E/E architectures, Energy Conversion, Auxiliary Actuators, Electrification of functions and creation of new functions, Energy harvesting, Components for electrical energy distribution and management **Robustness and Reliability** : Component, organ and system failure mechanisms, Physical and chemical aspects of the failure, Test methods for new products and systems, Industrialization, Reliability of mechatronic systems **Design Methods and Tools :** to support the process of mechatronic design and simulation: Multi physical models, Systems, Embedded Algorithms, Database of Materials, Characterized within their cycle of mechatronic use, Characterized in terms of fatigue and ageing.

REGENSBURG REGION		
Name	**Funding organization**	**Description**
"Intelligent Energy Management/Smart Grids P.46 RR Regensburg, Sect. 5.1.1	Regional	All aspects of integrating electric vehicles as well as renewable energies into the energy distribution grid are covered. R&D Projects: **Smart-Energy-Campus-Regensburg.** **Intelligent voltage stability in medium voltage grids** P.46 RR Regensburg, Sect. 4.2.3 P.49 RR Regensburg, Sect. 4.2.3
Intelligent Charging Infrastructure P.47 RR Regensburg, Sect. 5.1.1	National	All aspects of charging electric vehicles including the interfaces to the vehicle and the energy distribution grid are covered, as well as additional services. Objective is to initiate joint development projects in this area (for innovative components for charging devices) to realize intelligent, user friendly charging infrastructure. This includes hard- and software for charging stations, ICT and mobile applications and data transfer to vehicle as well as the energy grid. Three sub-areas are present: • Interface/Integration • Hardware/Usability • E-Mobility Test-House RTD-Project: **Direct DC-charging of e-vehicles with photovoltaic.** P.48 RR Regensburg, Sect. 4.2.3
"Powertrain" thematic group P.46 RR Regensburg, Sect. 5.1.1.	Regional	Students will refit a smart car "Fortwo" with an electric Powertrain. This Labcar then is a means of testing new or different components and gaining data as battery status, driving cycles and other operating data. Project partners are RUAS Regensburg (faculty of Electrical Engineering and Information Technology) and F.G.H. Mediawerk, who supports the delivery of the smart car and the licensing of the electric version. The Project started in March 2012. Refitting is planned to be finished end of August 2012.

		R&D Projects: **E-Smart – LabCar (Education projects)** P.50 RR Regensburg, Sect. 5.2.3
PIEDMONT		
Name	**Funding organization**	**Description**
Innovation Cluster – Lago Maggiore P.19 RR Piedmont, Sect. 1.3	Piedmont Regional Council	Plant engineering, system and components for renewable energy
Innovation Cluster – POLIGHT P.19 RR Piedmont, Sect. 1.3	Ministry of Economic Development Piedmont Regional Council European Regional Development Fund - ERDF	POLIGHT is the research and development Cluster of the Piedmont Region dedicated to sustainable building technologies and hydrogen. It is based in Turin, in an industrial and technology context among the most important at the European level, the cluster is coordinated by Environment Park, Science and Technology Park for the environment, and it was collective consisting in 2009 from an initiative of the Region supported by the European Regional Development Fund - ERDF.
Innovation Cluster – IBIS Consortium - Innovative Bio Based and Sustainable Products and processes P.19 RR Piedmont, Sect. 1.3	Ministry of Economic Development Piedmont Regional Council	Currently, the Cluster groups 25 companies, 3 Piedmont universities and the Province of Novara. They are all members of Consorzio IBIS (Innovative BIo-based and Sustainable products and processes), which has its legal office at the Industrial Association of Novara. IBIS is also the managing body of the Cluster and it is responsible for the incentive, the coordination and the selection of the demand for innovative services and projects that comes from the members. IBIS is characterized by a very simple organization open to other members interested in its opportunities and potentialities.
Innovation Cluster – ENERMHY P.19 RR Piedmont, Sect. 1.3	Ministry of Economic Development Piedmont Regional Council European Union	Mini hydro and renewable energies

Innovation Cluster – POLIBRE – Renewable Energies and Bio-fuels Innovation Pole P.19 RR Piedmont, Sect. 1.3	Ministry of Economic Development Piedmont Regional Council European Union	The clusterisfinalized towards the diffusion of innovation in specific sectors, made up of about forty member groups among which are: • The Management Company (P.S.T. S.p.A.) • Universities (Turin Politecnico, Turin University, East Piedmont University) • Research Centers (CRA-PLF) • Small and Medium Enterprises • Large Companies • Consortiums (AL.TECH and Proplast)
Innovation Cluster - Innovation in New Matrials P.19 RR Piedmont, Sect. 1.3	Ministry of Economic Development Piedmont Regional Council European Union	The consortium (http://www.innomat.it) isfocused on promoting innovation in companies working in the field of plastic materials. It is managed by PROPLAST (http://www.proplast.it/). The cluster goal is - to offer services to all those - enterprises and people - who operate in the plastics field and are interested in its development - to promote the creation of a reference point for experimental and research activities, both within the courses and in favor of companies working in the plastic field - to represent a reference point for a professional education about plastics - to promote the co-operation between national and international companies, athenaeums and other business, formative and research entities The cluster counts today 211 consortium members: 186 industrial companies 9 associations 13 universities

		2 public bodies and 1 bank foundation 3,6 million euro of income (2011) 42 employees
Innovation Cluster – Mechatronics and Advanced Manufacturing (Mesap) P.19 RR Piedmont, Sect. 1.3	Ministry of Economic Development Piedmont Regional Council European Union	Mechatronics and advanced manufacturing systems
Automotive Platform P.39 RR Piedmont, Sect. 3.3.1	Ministry of Economic Development Piedmont Regional Council European Union	Regional Operational Programme (ERFD) - Line of activity I.1.1 “Innovative Platforms” 30 mln € (ROP-ERFD) + 12 mln € (Research Ministry) The Platform is the tool through which Piedmont Region aims to support the research carried out by large firms, to-gather with SMEs on issues of technological frontier. In particular for the Automotive Platform, the themes, projects and the topics set by the Platform are the follows: • Engines with low environmental impact • Electrification of the vehicles propulsion • Hybridization of propulsion systems and energy sources • Small diesel engines with high efficiency • Technologies for very low pollutant emissions • Reduction of losses and energy recovery on board the vehicle for improving energy efficiency • New materials for the lightening of the weight of the vehicle and for the improvement of supply logistics.

		The themes of Info-mobility and Smart cities are both seen as enabler factors for the success of the Platform. Next to this, the Platform provides a large number of transverse actions, including: the involvement of components, facilities to producers for specialized training on new materials, training initiatives and internationalization actions.

9.1.2 New Business Model and mobility services

In this area we have classified the cluster initiatives that deals with future mobility solutions, focusing not primarily on the vehicle but on the measures that can be proposed at the level of transport system and that can also have implications at vehicle level. These initiatives alsoconcentrate on the impacts of the new technologies on markets, businesses and future mobility.

A few initiatives have been collected from the regional reports and reported in the Table 9.b below. This does not mean that SAGE consortium is not strongly committed in this area, but only that the inventory regional reports have been more focused on the technical focus areas "Green", "Safe" and "Connectivity". However, during the inventory phase the SAGE consortium has identified the need for a cross-cutting area that allow exchanges to occur between different technical and social domains, enabling thecreation of new products, new services and new business models in mobility. Therefore, this focus area needs to be further invetigated in WP3 and WP4.

Table 9.b: Cluster Initiative – Focus Area: New Business Model and Mobility Services

WESTERN SWEDEN		
Name	**Funding organization**	**Description**
CLOSER P.56 RR VGR, Sect. 4.1.5	National and regional	It is hosted by Lindholmen Science Park. Platform for transportation actors' collaboration on primarily increasing the efficiency in the goods transportation sector. Primary focus areas are in *goods transport sector*, *high capacity transports*, *green corridors*, and *smart urban transport*.
PARIS AND UPPER NORMANDIE (Mov'eo Region)		
Name	**Funding organization**	**Description**
STRATEGIC AREAS: **Intelligent Mobility Solutions (DAS SMI)** P.30 RR Mov'eo, Sect. 4.1.1.	Mov'eo	**Value-Added services**: Inter-modality, Vehicle sharing, pooling, optimization, Economy and value chain (information, e-payment), Smart infrastructure (multimodal hub, high-service-level car park, smart bus stops), Automatic vehicles/convoys, Urban planning and climate plans, Legislation evolution, Data (open data, meta-data…), eco-driving **Mobility for everyone**: Mobiles including environmental and social considerations, Enjoyable mobility, Usage scenarios, Human-machine interaction, ergonomics, Pooling and dynamic allocation of resources (infrastructure, vehicle…), Technologies and services for everyone and for all purposes (including people with

		special needs, elderly and disabled drivers) **Smarter vehicles**: Vehicle as a multiform sensor (passengers, traffic, maintenance, infrastructure), Vehicle as a platform (exchange, sharing and management of data), Communication (vehicle to vehicle, vehicle to infrastructure, vehicle to web, vehicle to passenger interactions), Vehicle on the Web/Cloud (exchange, sharing and management of data), ITS services (ICT, multimodal information, payment, reservation), Operating safety, Data protection, Vehicle protection Example of R&D Project: **E'MOTIVE: Environment Modeling for Perceptive Intelligent Vehicles.** P.37 RR Mov'eo, Sect. 4.3.2.

9.1.3 Connectivity

The cluster initiatives in the Connectivity area are aimed at achieving new products and new services that can make vehicles more safe and environmentally friendly. The initiatives reported in Table 9.c have been already described in the Section 9.1.1 (Green) or Section 9.1.2 (New Business Model and Mobility Sector) or are also included in Section 9.1.4 (Safety), since connectivity is an enabling factor for safe and green technologies as well as a fundamental technology for the application of new mobility services.

As far as Piedmont region is concerned, it is worthwhile recalling that in Torin operates a TECHNOLOGICAL DISTRICT focused on ICTs leaded by a government body (the Torino Wireless Foundation). The District aims to enhance the innovative potential as well as their degree of competitiveness and international openness of Piedmont's ICT companies. The District promotes also new models of collaboration, knowledge transferring and cluster projects among private actors and public players.

No inititives for Western Sweden are included in the table 9.c. However, they do exist in this region but were not included in the regional report. In addition, the strong cluster initiatives of this region in the Safety area (Safer, AstaZero and FFI – Safety programme areas, see Section 9.1.4) have also strong and clear links to Connectivity, especially in the field of active safety.

Table 9.c: Cluster Initiative – Focus Area: Connectivity

PARIS AND UPPER NORMANDIE (Mov'eo Region)		
Name	**Funding organization**	**Description**
STRATEGIC AREAS: **Intelligent Mobility Solutions (DAS SMI)** P.30 RR Mov'eo, Sect. 4.1.1.	Mov'eo	**Value-Added services**: Inter-modality, Vehicle sharing, pooling, optimization, Economy and value chain (information, e-payment), Smart infrastructure (multimodal hub, high-service-level car park, smart bus stops), Automatic vehicles/convoys, Urban planning and climate plans, Legislation evolution, Data (open data, meta-data…), eco-driving **Mobility for everyone**: Mobiles including environmental and social considerations, Enjoyable mobility, Usage scenarios, Human-machine interaction, ergonomics, Pooling and dynamic allocation of resources (infrastructure, vehicle…), Technologies and services for everyone and for all purposes (including people with special needs, elderly and disabled drivers) **Smarter vehicles**: Vehicle as a multiform sensor (passengers, traffic, maintenance, infrastructure), Vehicle as a platform (exchange, sharing and management of data), Communication (vehicle to vehicle, vehicle to

		infrastructure, vehicle to web, vehicle to passenger interactions), Vehicle on the Web/Cloud (exchange, sharing and management of data), ITS services (ICT, multimodal information, payment, reservation), Operating safety, Data protection, Vehicle protection Example of R&D Project: **E'MOTIVE: Environment Modeling for Perceptive Intelligent Vehicles.** P.37 RR Mov'eo, Sect. 4.3.2.
REGENSBURG REGION		
Name	**Funding organization**	**Description**
"Intelligent Energy Management/Smart Grids P.46 RR Regensburg, Sect. 5.1.1	Regional	All aspects of integrating electric vehicles as well as renewable energies into the energy distribution grid are covered. R&D Projects: **Smart-Energy-Campus-Regensburg.** P.49 RR Regensburg, Sect. 4.2.3 **Intelligent voltage stability in medium voltage grids** P.46 RR Regensburg, Sect. 4.2.3
Intelligent Charging Infrastructure P.46 RR Regensburg, Sect. 5.1.1	National	All aspects of charging electric vehicles including the interfaces to the vehicle and the energy distribution grid are covered, as well as additional services. Objective is to initiate joint development projects in this area (for innovative components for charging devices) to realize intelligent, user friendly charging infrastructure. This includes hard- and software for charging stations, ICT and mobile applications and data transfer to vehicle as well as the energy grid. Three sub-areas are present: • Interface/Integration • Hardware/Usability • E-Mobility Test-House RTD-Project: **Direct DC-charging of e-vehicles with photovoltaic.** P.48 RR Regensburg, Sect. 4.2.3
"Safety Architecture in e-vehicles" thematic group	Regional	Coordinated by the Automotive Forum of the IT-Safety-Cluster this group covers the aspects of safety with special focus on ICT in electric vehicles. Advisor from

P.46 RR Regensburg, Sect 5.1.1		business is AVL Software & Functions GmbH. R&D Projects: **Safety of System and Software in E-Mobility** P.51 RR Regensburg, Sect. 5.2.3
TORINO CLUSTER		
Name	**Funding organization**	**Description**
Automotive Platform P.39 RR Piedmont, Sect. 3.3.1	Ministry of Economic Development Piedmont Regional Council European Union	Regional Operational Programme (ERFD) - Line of activity I.1.1 “Innovative Platforms” 30 mln € (ROP-ERFD) + 12 mln € (Research Ministry) The Platform is the tool through the PIE aims to support the research carried out by large firms, to-gather with SMEs on issues of technological frontier. In particular for the Automotive Platform, the themes, projects and the topics set by the Platform are the follows: • Engines with low environmental impact • Electrification of the vehicles propulsion • Hybridization of propulsion systems and energy sources • Small diesel engines with high efficiency • Technologies for very low pollutant emissions • Reduction of losses and energy recovery on board the vehicle for improving energy efficiency • New materials for the lightening of the weight of the vehicle and for the improvement of supply logistics. The themes of Info-mobility and Smart cities are both seen as enabler factors for the success of the Platform. Next to this, the Platform provides a large number of transverse actions, including: the involvement of components, facilities to producers for specialized training on new

		materials, training initiatives and internationalization actions.

9.1.4 Safety

In Western Sweden the safety area is well mature and embedded in the automotive cluster. A possible explanation for this is that one of the primary objectives of the administration is safety. Sweden's long-term road safetygoal is no fatalities or serious injuries connected to road traffic. This goal was ratified by theSwedish Parliament in 1997 and is based on the 'Vision Zero' programme. Swedish roadsafety work is based on the notion that there is no 'acceptable' level of human death orlifelong suffering as a result of road traffic accidents. The Swedish Parliament decided in June2009 on a new interim target for road safety, whereby from 2007 to 2020 the number offatalities was to be halved and the number of serious injuries was to be reduced by a quarter.

Three main Safety cluster initiatives are reported, that differs in terms of innovation focus.

SAFER is the primary research-intensive cluster initiative in Western Sweden in the area of road vehicle safety, and currently has 24 partners from academia, industry and government. The technology content in R&D on active safety is primarily concentrated on enabling technologies, such as communications and sensor fusion that can be applied to sensing systems that help avoid crashes. In this context, links to the Connectivity focus area are relevant. In the area of passive safety, SAFER conducts human modelling, analysis of injury mechanisms and evaluation of injury criteria, and develops concepts for new protective devices. Work on traffic safety analysis is focused on developing new or improved methodologies for testing that are based on realistic data.

AstaZero (Active Safety Test Area) is a development-intensive cluster initiative in its early phase that is set to open in 2014. AstaZero is a facility, site area and organization for active safety development. Different test areas include city centres, country roads, highwayroads, vehicle dynamics testing areas, a development centre located on-site and ICT testinginfrastructure (with clear links to Connectivity focus areas).

FFI – Safety Programme Areas is a group of public/private actors that organize Swedish technical R&D in safety and rely on PPP mode.

Safety is also important for **Mov'eo and Torino cluster**. However, Mov'eo has consolidated cluster initiatives in this area, whereas Piedomnt cluster R&D in this area has been developing by means of joint participation of Fiat group and other regional stakeholders to national or EU projects. The Automotive Platform launched by Piedmont Region is a recent attempt to start a clustering activity in this area.

As far as **Regensburg cluster** is concerned, the thematic group **Safety Architecture in e-vehicles** covers the aspects of safety with special focus on ICT in electric vehicles.

Table 9.d: Cluster Initiative – Focus Area: Safety

WESTERN SWEDEN		
Name	**Funding organization**	**Description**
FFI – Safety	National	Although FFI is not a 'cluster' in the formal sense, it engages in certain cluster functions in the system. FFI

programme areas P.61 RR VGR, Sect. 4.2.3		represents a constellation of private and public actors that, in practice, organize Swedish technical R&D in safety and relies on a public–private partnership mode (albeit the relationship is formalized by contractual agreements and is not open for actors to enter). Organizing safety-related R&D occurs in the programme and the programme board area of vehicle safety and traffic safety, and indirectly through the vehicle R&D area. The partnerships gather all primary industry OEMs, a smaller number of suppliers with research capacity and primary national government authorities for road transport and innovation. The FFI safety programme area focuses on three future technological solutions, formulated as vehicle concepts: (1) the supportive and protective vehicle, (2) the anticipating and connected vehicle and, finally, (3) the interacting vehicle. Technology development is approached through six different sub-programme areas for safety and security: enabling technologies, basic safety properties of vehicles, crash safety, security (against antagonistic intervention), driver assistance and related interfaces between driver and vehicle and, finally, intelligent crash avoidance systems and vehicles.
SAFER P. 59 RR VGR, Sect 4.2.1	National	Sub Area of competences • Biomechanics (CIT / Applied mechanics) • Protective systems (CIT / Applied mechanics) • Structure and materials (CIT / Applied mechanics) • Vehicle dynamics (CIT / Applied mechanics) • Field data (CIT / Applied mechanics) • Sensors and communications (CIT / Signals and Systems) • Human Factors Design (CIT / Product and Production Development) • Traffic Systems (Viktoria Institute) • Functional safety (SP - Technical Research Institute of Sweden, link to ASTA, see below)

		• Driving Simulator Applications (the SIM IV) (Swedish National Road and Transport Research Institute) • Behavior in Accident Causation (AB Volvo)
AstaZero – Active Safety Test Area (to be opened in 2014) P.60 RR VGR, Sect. 4.2.2	National and regional	Practical development and advanced testing in the road vehicle active safety area. Different test areas include city centre, country roads, high-way roads, vehicle dynamics testing area, a development centre located on site, and ICT testing infrastructure. AstaZero has received more than 35 MSEK from InMotion and 20 MSEK directly from the Regional Development Board (see **Regional and local public administration** section to know more about InMotion and the Regional Development Board), and several MSEK from the national agencies.
PARIS AND UPPER NORMANDIE (Mov'eo Region)		
Name	**Funding organization**	**Description**
Demonstration of Low Co2 Vehicles (DAS DVD) P.31 RR Mov'eo Sect 4.1.3	Mov'eo	**Development and assessment of demonstrators**: Experimental deployment of carbon-free vehicles, Integration of new electrical and hybrid Powertrains and their interfaces in the vehicle: EV, HEV, PHEV, range extender, FCV), New vehicle architectures (wheel motor, dedicated platform, seats, boot…). **Demonstration of Vehicle / Infrastructure Interactions**: Power supply systems for low CO2 emission vehicles, alternative energies H2, NGV (station, cylinder exchange). **New "mobiles"**: Development and demonstration of specific vehicles: innovative « urban » vehicles, Niche markets, Small public transport vehicles. **Vehicle Dynamics**: Aerodynamics, Rolling resistance, Dynamics and safety (suspension, steering, braking and related active systems), New lightweight architectures. Example of R&D Project: **MOOVILLE: New urban vehicle for multi-applications.** P.36 RR Mov'eo, Sect. 4.3.2.

STRATEGIC AREAS: **Road User Safety (DAS SUR)** P.31 RR Mov'eo, Sect. 4.1.2	Mov'eo	**Technological road safety innovations:** Road traffic system safety (People/vehicles/infrastructure, Integrated: primary, secondary and tertiary), New mobiles safety (quadricycles, electric vehicles, hybrid vehicles), Communicating cooperative systems, Protection of vulnerable users, Design of public spaces and road networks, Delegated and automatic driving **Human behavior:** Road user behavior study (Naturalistic studies, Instrumented vehicles and sites), Driver monitoring, Driving strategies modeling, Human-system interaction, Impacts of new technologies and systems, Transition from normal driving to automatic driving, Training and awareness **Simulation and assessment:** development of simulation and assessment methods and tools related to road safety: Digital approach (numeric models driver/vehicle/traffic/infrastructure, driving simulator and virtual reality), Experimental approach (Software & hardware in the loop, test benches, sensors and instrumentation, experimental loops/circuits, open road), and Impact studies.
REGENSBURG REGION		
Name	**Funding organization**	**Description**
"Safety Architecture in e-vehicles" thematic group P.46 RR Regensburg, Sect 5.1.1	Regional	Coordinated by the Automotive Forum of the IT-Safety-Cluster this group covers the aspects of safety with special focus on ICT in electric vehicles. Advisor from business is AVL Software & Functions GmbH. R&D Projects: **Safety of System and Software in E-Mobility** P.51 RR Regensburg, Sect. 5.2.3
PIEDMONT		
Name	**Funding organization**	**Description**
Automotive Platform P.39 RR Piedmont, Sect. 3.3.1	Ministry of Economic Development Piedmont Regional	Regional Operational Programme (ERFD) - Line of activity I.1.1 "Innovative Platforms" 30 mln € (ROP-ERFD) + 12 mln € (Research Ministry) The Platform is the tool through the PIE aims to support the research carried out by large firms, to-gather with

	Council European Union	SMEs on issues of technological frontier. In particular for the Automotive Platform, the themes, projects and the topics set by the Platform are the follows: • Engines with low environmental impact • Electrification of the vehicles propulsion • Hybridization of propulsion systems and energy sources • Small diesel engines with high efficiency • Technologies for very low pollutant emissions • Reduction of losses and energy recovery on board the vehicle for improving energy efficiency • New materials for the lightening of the weight of the vehicle and for the improvement of supply logistics. The themes of Info-mobility and Smart cities are both seen as enabler factors for the success of the Platform. Next to this, the Platform provides a large number of transverse actions, including: the involvement of components, facilities to producers for specialized training on new materials, training initiatives and internationalization actions.

9.2 Collaboration platforms and cross-cutting projects

The collaboration platforms described in what follows are physical places in which the full spectrum of innovation processes is hosted (from the laboratories of academic departments to non-profit applied research centers, from industrial research labs from large multinationals to the young startups hosted by Incubators). They represents a facilitating environments (open to new actors) where the stakeholders from the triple helix can meet and work together, create new teams, manage and create new projects. The platforms included in this report have been (and/or will be) responsible for producing new cluster initiatives in technology specific areas.

Table 9.e: Cross cutting Collaboration Platforms

WESTERN SWEDEN	
Automotive Sweden P.67 RR RVG, Sect. 4.3.5	Automotive Sweden is an independent public non-profit communication organization financed by Region Västra Götaland, Business Region Göteborg and the regional associations of local municipalities in Sjuhärad Fyrbodal and Skaraborg. Automotive Sweden, hosted by Business Region Göteborg,

	operates as an office and is staffed with three people. The aim of Automotive Sweden is to disseminate knowledge about the automotive industry to the concerned municipalities and to other national and international players, and to stimulate triple-helix cooperation to market the automotive cluster of Western Sweden. Activities include conferences and dedicated seminars, production of reports and newsletter publicationsand networking activities.
Innovatum Technology Park P.56 RR VGR, Sect. 4.3.1	Local and regional platform for innovation to support the change in the automotive industry, where new competences needed to be developed in order to stay competitive, such as for example telematics. It contains a science centre, a project arena and an incubator (and is also a popular meeting venue). It offers premises and equipment as well as project managers and advisers who coordinate and run research and development projects within two focus areas relevant to Automotive field (+ a third focus area: media technology): • production technology; o smart methods for production: surface coating processes (thermal spraying); welding; cutting processes; sheet-metal stamping o sustainability in production o light-weight technologies • energy- and environmental technology; o hybrid electric drivetrain technology o electromobility (Innovatum Project Arena supported by the regional development programme InMotion: P.19 RR VGR, Sect. 3.2.1) o Green Factory centre (launched in 2011): to support green tech to enter the market. One of the focus areas is sustainable transport. This center also support the demonstration park for electric vehicle charging at Innovatum.
Lindholmen Science Park P.57 RR VGR, Sect. 4.3.2	The goal of is to be a centre for research and development projects with partners in industry, institutes, public sector and universities. It focuses on: • mobile internet, • intelligent vehicles and transport systems, • modern media and design.

	It also hosts the Lindholmen Open Arena (P.18 RR VGR, Sect. 3.2.1)
Test Site Sweden P.58 RR VGR, Sect. 4.3.3	It is a national demonstration and testing arena for joint research projects (with the aim of developing test infrastructure or test methodology) in: • automotive safety (active safety), • environment (electric and hybrid vehicles, currently the main focus) • intelligent transportation systems (ITS). Virtual, full-scale and reality Labs are present.
Business Region Göteborg P.59 RR VGR, Sect. 4.3.4	The organization takes project broker and management roles in local implementation and development projects. There is not a specific technical focus and projects are usually not R&D or intensive; however a de-facto focus is represented by *biogas*.
PARIS & UPPER NORMANDIE REGION (Mov'eo Region)	
VeDeCoM Institute **(Institute for Excellence in Low-Carbon Energies)** P.38 RR Mov'eo, Sect. 4.3.3.	Institute for Excellence in Low-Carbon Energies in the field of land transport and eco-mobility: €300 million of investment over the next 10 years. To be realized in Versailles-Satory (Heart of the French Automobile Valley in Paris region). The main research themes are: • carbon-free electric vehicles, • connectivity and driving delegation, • new uses associated to services for shared mobility.
CISE (Embedded Systems Integration Campus) P.39 RR Mov'eo, Sect. 4.3.3.	Campus dedicated to energy and sustainable mobility. Funding for the CISE, amounting to a sum of €14 million. To be inaugurated in Technopole du Madrillet near Rouen. Four major scientific areas in the integration of on-board systems: • diagnostics, • EMC, • Mechatronics • fully electronic systems These four areas are active in three fields of application: • navigation systems, • economic clean vehicles, nacelles of the future.
CIRIAM (Industrial Campus Industrial for Research and Innovation in Materials) P.39 RR Mov'eo, Sect. 4.3.3.	Particular attention is paid to the creation of new activities and enterprises around the campus: • seat-mechanisms hydraulic catapult for material testing

REGENSBURG REGION	
Automotive Summer School P.47 RR Regensburg, Sect. 4.2.3	Educational cross cutting project
Fleet-test of two electric cars P.47 RR Regensburg, Sect. 4.2.3	Demonstration cross cutting project.
E-Wald Project (e-mobility in rural model region "Bavarian Forest") P.47 RR Regensburg, Sect. 4.2.3	Demonstration cross cutting project.
Formula Student Electric. P. 51 RR Regensburg, Sect. 5.2.3	Educational cross cutting project
PIEDMONT	
Environment Park P.20 RR Piedmont, Sect. 1.3	Environment issues, eco-efficiency, sustainable energy are the main technological focus of this park.
Valle Scrivia Science and Technology Park P.20 RR Piedmont, Sect. 1.3	The Science and Technology Park in Valle Scrivia is one of 6 Scientific and Technological Parks created by Regione Piemonte to encourage the spread of innovation and the exchange of know-how between universities, research centers and businesses. To manage the Science and Technology Park in Valle Scrivia, the P.S.T. S.p.A. – a company of mixed public and private capital was created. The Shareholders of P.S.T. S.p.A: • Finpiemonte S.p.A. 79% (regional financing institute) • Banks 15% (Banca Regionale Europea, Cassa di Risparmio di Alessandria) • Local Private Contributors 3,5% (Gavio Group, Business Associates, Chamber of Commerce) • Local Public Contributors 2,5% (Tortona Town Council, Energia e Territorio S.p.A.) Since 2009, P.S.T. S.p.A. has also been the management company of POLIBRE, the Regional INNOVATION POLE for RENEWABLE ENERGIES and BIOFUELS.
Virtual Reality and Multimedia Park	VR&MM Park is a Technological Park equipped with forefront technologies for audio-video production and post production and for multimedia

P.20 RR Piedmont, Sect. 1.3	researching and prototyping, strongly connected with virtual reality applications
Cittadella Politecnica	The Cittadella Politecnica (the 170,000 m^2 recent expansion of the main campus in a central position of Torino city) is the place dedicated to cooperation between POLITO and industries. Cluster activities have their natural physical demonstration in this campus, in which the full spectrum of innovation processes is hosted, from the laboratories of academic departments to non-profit applied research centers, from industrial research labs from large multinationals to the young startups hosted by the Incubator.
Cittadella della mobilità	The facility hosts classrooms and student facilities for the course of Automotive Engineering and Industrial Design and Visual Communication. It consists in three blocks covering a total area of 7500 square meters realized at Mirafiori (where Fiat has its production plants). The facilities accommodate about 1500 students and have classrooms, laboratories, study halls and refreshment areas. It will also host research laboratories and departments, and the offices of the new Automotive technology platform launched by Regione Piemonte.
Energy Center	This is a new research facility aimed at facilitating the testing and implementation of new technologies related to energy savings, including in the field of mobility. The approach is to constitute a meeting point among researchers, technology suppliers and stakeholders to develop innovating projects.

10 Conclusions

Western Sweden, Regensburg, Mov'eo and Piedmont are amongst the most important regional research driven automotive clusters in Europe.The technical competences of these regions were analyzed at two levels. The specific competences of the key stakeholder were investigated and reported in Chapter 7, and the main cluster initiatives related to the automotive sector started in each cluster were shown in Chapter 9. In addition, the national and regional measure to support research, education and innovation were analyzed and summarized (Chapter 8).

Western Sweden, Ile-de-France, Upper Normandie and Piedmont host the headquarters, plants, engineering and production centres of worldwide vehiclemanufactures. The presence of leading automotive suppliers, public research centres and universities is also significant, whereas professional organizations and SMEs complete the global picture of the cluster ecosystem. For these regions the inventory also shows a strong and broad commitment in technology sectors (see Chapter 7-9) related to Green and Safe technology as well as on Connectivity and future mobility solutions, which do not primarily focus on the vehicle but on the measures that can be proposed at the level of transport system and that can also have implications at vehicle level.

However, the City of Regensburg revealed to be a distinct cluster of suppliers and providers mainly focused on electromobility and ICT technologies, which is complementar with respect to the other SAGE clusters, all characterized by a strong presence of vehicle manufactures and OEMs and a broader technical focus.

As far as the Green technology sector is concerned, SAGE regions basically address all the topics realated to New Powertrain Technologies, Vehicle electrification and rational use of energy in mobility and transport systems.
Western Sweden and Piedmont have a strong and long-term commitment in bioethanol, biogas and alternative gaseous fuel production (Green area), including significant investments to promote the related infrastructures and demonstration in public transport. In Germany, a national supporting programme is focused on hydrogen infrastructures and fuel cell technologies.
The sector Green Production is mainly addressed in Piedmont (with two Innovation Clusters: Innovation in New Materials and Mechatronics and Advanced Manufacturing), Mov'eo and Western Sweden.
Other broad cluster Green competences are related to the Mechtronic technology area and are mainly present in Mov'eo (Strategic topic Mechatronics Systems DAS-SME) and in Piedmont (again the Mechatronics and Advanced Manufacturing innovation cluster). With reference to the automotive field, these cluster initiatives focus on subsectors as energy harvesting and recovering systems and robustness and reliability of mechatronic systems.

In Western Sweden the safety area is well mature and embedded in the automotive cluster. Safety is also important for Mov'eo and Torino cluster. However, Mov'eo has consolidated cluster initiatives in this area, whereas Piedomnt cluster R&D in this area has been developing by means of joint participation of groups of cluster stakeholders to national or EU projects. As far as Regensburg cluster is concerned, it covers the aspects of safety with special focus on ICT in electric vehicles.

Even though the focus of this report was on Green and Safe technologies, the SAGE partners have also recognized the importance of two additional focus areas: Connectivity and New Business Model and Mobility

Services. The Connectivity area includes the enabling technologies aimed at achieving new products and new services that can make vehicles more safe and environmentally friendly. The New Business Model and Mobiity Service area deals with future mobility solutions, focusing not primarily on the vehicle but on the measures that can be proposed at the level of transport system and that can also have implications at vehicle level. All SAGE clusters have clear and strong competences in these areas.

The stakeholder expectations were also collected in each cluster and the following priorities were identified for the JAP:

- Promote the SAGE consortium priority topics through JAP
- Build further actions to support innovative SME
- Initiate new European partnerships within the SAGE regions stakeholders, bridging gaps between clusters
- Become a part of a qualified European network
- Complement the other European initiatives (EUCAR, CAPIRE, ERTRAC, …)
- Enrol SAGE members in European projects
- Make SAGE consortium an European actor
- Promote the competences of the SAGE regions
- Strengthen the international involvement of SAGE consortium
- Define procedures and rules capable of attracting technology-based investments from foreign companies and, at the same time, securing the existing know-how

A. Appendix. Stakeholder list

The Appendix reports the stakeholder lists of each cluster in Tables A.a-A.d. The stakeholders have been classified according to the four focus area defined in SAGE project:

1) Green
2) Safety
3) Connectivity
4) New Business Models and Mobility Services (NBM)

The Green focus area includes the vehicle technologies needed to meet the requirements for energy saving, diversification and decarbonisation as well as for the reduction of pollutant emissions.
The Safety focus area covers all actions related to the improvement of road safety of the vehicle, of the infrastructure, a better driver behavior, and the organization of the transport system. All different types of safety (cooperative-preventive-active, passive and after crash) are considered, within an integrated approach.
The Connectivity focus areas considers the V2V and V2I communications, which are enabling factors for making road traffic more safe, environmental friendly and more comfortable.
The New Business Model and Mobility Services (NBM) focus area is a cross-cutting area that concentrates on the impacts of the new technologies on markets, businesses and future mobility.

For each player a short description is reported along with website and contact person. The Stakeholer type in tables A.a-A.d has been selected according to Table A (see D2.1 Metholdogy report for additional details).

An Excel database has also been built up. It contains the complete stakeholder lists of each SAGE cluster, calssifiedper focus area and according to the keywords defined in the methodology report.

Table A - Stakeholder type		
Science &Technology		
R	Research Centre (or Departments)/University (Labs or Departments)	
E (*)	Enterprises:	
	SE	Small Enterprise
	ME	Medium Enterprise
	LE (***)	Large Enterprise
Education		
TA	training organizations (Universities, foundations, …)	
Boosting Competitiveness		
PA:	public administration	
Pr:	professional organization (e.g., chambers of commerce)	
DA:	development agency (e.g., business incubators, science parks, technology transfer agencies, fundraising)	
CA:	cultural association: any other association that can promote workshop, contact and exchange of experience between actors in the region and all over the word (e.g., foundations, …)	
O:	Other	
Ev:	regular events that can act as collectors of stakeholders (e.g., fairs, networking events)	

Notes:
(*) The requirements to be classified as SE/ME/LE are:
- independency from other groups;
- SE: number of employees <250
- ME: number of employees : 250-2000
- LE: number of employees > 2000

A.1. Western Sweden

Table A.a: Stakeholder list: Western Sweden

	Player	Short Description	Website	Stakeholder type	Contact person	GREEN	NEW BUSINESS MODELS & MOBILITY SERVICES	CONNECTIVITY	SAFETY
1	AB Volvo: Volvo Buses	Volvo buses are the world's second largest bus manufacturer. The product range includes complete buses and coaches as well as chassis combined with a range of services.	www.volvogroup.com	LE	Gustafsson Ulf Ulf.Gustafsson@volvo.com	X	X	X	X
2	AB Volvo: Volvo Group Trucks Technology (GTT)	Volvo Group Trucks Technology is a worldwide entity, within Volvo Group, covering the entire value chain from long-term research and planning to final delivery of complete vehicles and services to the Volvo Group truck business, as well as supporting the products in the aftermarket.	www.volvogroup.com	LE	Michael Balthasar, +46 31 3220992 michael.balthasar@volvo.com	X	X	X	
3	AB Volvo: Volvo Group Trucks Technology (GTT): Advanced technology and research	Advanced Technology & Research (former Volvo Technology) is the centre for innovation, research and development in the Volvo Group.	www.volvogroup.com	LE	Ann-Sofi Karlsson Ann-Sofi.Karlsson@volvo.com	X	X	X	X

	Player	Short Description	Website	Stakeholder type	Contact person	Gr	NBM	C	S
4	Alelion Batteries AB 556710-7916	Alelions main business is to define, develop and deliver tailor-made batteries and power electronics. Today Alelion focus on Lithium Iron cells.	http://www.alelion.com/	SE	Lars Mila, President, CEO email: lars.mila@alelion.com phone: +46 303331711 Rödjans väg 23 449 34 Nödinge Sweden	X			
5	ALTERNATIVE FUEL VEHICLE SWEDEN AB 556763-5775	Alternative Fuel Vehicle (AFV) Sweden AB is a company that develops and produces vehicles powered by alternative fuels, primarily biogas.	http://www.afv.nu/	SE	Dan Blomberg, CEO info@afv.nu +46-31 - 757 85 00 VOLVO TORSLANDAVERKEN 418 78 Göteborg	X			
6	Autoliv Sverige AB 556080-7173	Autoliv develops seatbelts, safety electronics, steering wheels, anti-whiplash systems, seat components and integrated child seats as well as active safety systems.	www.autoliv.se	LE	Yngve Håland yngve.haland@autoliv.com Phone: +46 (0)70 66 90 881				X
7	Automotive Sweden	Automotive Sweden is an independent non-profit organisation with the task to spread knowledge about the automotive industry to national and international players, stimulate triple helix cooperation and to market the Western Sweden automotive cluster.	www.automotivesweden.se	O	Malin Norén, malin.noren@businessregion.se, +46 31 367 61 72	X	X	X	X
8	Business Region Göteborg AB (BRG)	Business Region Göteborg AB (BRG) is a non-profit company that works to strengthen and develop trade and industry in the Gothenburg region.	www.businessregion.se	DA	Lars Bern, lars.bern@businessregion.se, +46313676124	X	X	X	X
9	CERC – Combustion Engine Research Center	The Competence Centre for Catalysis ishosted by Chalmers. The aim of the centre is to provide a forum where industry and academia can meet to perform high quality research on new technologies and combustion concepts leading to cleaner and more efficient engines.	http://www.chalmers.se/am/cerc-en	TA	Mark Linne mark.linne@chalmers.se	X			

	Player	Short Description	Website	Stakeholder type	Contact person	Gr	NBM	C	S
10	Chalmers University of Technology (Chalmers)	Chalmers has around 6 400 students in programmes leading to some 1300 Master's degrees annually.	www.chalmers.se	TA	Peter Eriksson +46 70-308 86 49 Peter.eriksson@chalmers.se	X	X	X	X
11	CHASE - Strategic Research Centre on Microwave Antenna Systems	The centre is located at Chalmers University of Technology, at the department of Signal & Systems (S2).	http://www.chalmers.se/s2/cha-en	TA	Staffan Sjödin staffan.sjodin@cit.chalmers.se			X	
12	Consat Sustainable Energy Systems AB 556779-8516	Consat Sustainable Energy Systems was established to advance and develop the company's skills in efficient and environmentally friendly energy conversion.	http://www.consat.se	SE	Jeanette Johansson, CEO Ögärdesvägen 19A 433 30 Partille +46 31-3400070 +46 702-280595 jeanette.johansson@consat.se	x		X	
13	Department of Applied Mechanics at Chalmers University of Technology	The Department of Applied Mechanics is one of the leading environments within Vehicle and Mechanical Engineering research at Chalmers. About 300 researchers.	http://www.chalmers.se/am/EN	TA		X			X
14	Department of Computer Science and Engieering at Chalmers University of Technology	CSE research spans the whole spectrum, from theoretical underpinnings to applied systems development.The Department is joint between Chalmers and the University of Gothenburg.	http://www.chalmers.se/cse/EN	TA		X		x	X
15	Department of Energy and Environment at Chalmers University of Technology	The research within the department covers a wide field within the areas energy and environment/sustainable development, from a global perspective to industrial, building, and product scale.	http://www.chalmers.se/ee/EN	TA		X			

	Player	Short Description	Website	Stakeholder type	Contact person	Gr	NBM	C	S
16	Department of Signals and System at Chalmers University of Technology	The Department of Signals and Systems conduct research in biomedical engineering, antennas and signal processing, control, automation and mechatronics, and communication systems.	http://www.chalmers.se/s2/EN/	TA		X		X	X
17	Ecar Sweden AB 556773-1343 (owned by Autoadapt AB)	ECar intend to offer the market electric cars that, by means of an industrialised conversion process and close cooperation with automotive companies. Cooperates with Fiat.	http://ecarsweden.com/	SE	Roger Johansson roger@ecarsweden.com Storås Industrigata 9, SE-424 69 Angered, Sweden Telephone: +46 (0)31 757 97 00 info@ecarsweden.com	X			
18	Effpower Aktiebolag 556570-8541	Effpower AB is a specialist company within the area of battery systems engineering.	http://www.effpower.com	SE	Per Svantesson, CEO +46 31 55 90 90 Info@effpower.com Effpower AB Kärrlyckegatan 20B SE-418 78 GÖTEBORG SWEDEN	X			
19	Epsilon	Epsilon is a consultancy agency in technology and systems development, with 1 650 employees.	www.epsilon.nu	ME			X	X	X
20	ETC Battery and FuelCells Sweden AB 556628-4559	The company engages in the development of batteries and fuel cells through the production adjustment to the research results through prototypes and pilot production.	http://www.etcab.se	SE	Göran Johansson, CEO +46 (0)303 74 12 65 +46 (0)708 65 76 03 ETC Battery and FuelCells Sweden AB Box 2055 449 11 Nol	X			

	Player	Short Description	Website	Stakeholder type	Contact person	Gr	NBM	C	S
21	f3 – The Swedish knowledge Centre for renewable transportation fuels	The Competence Centre for Catalysis is hosted by Chalmers. F3 is a nationwide centre, which through cooperation and a systems approach will contribute to the development of sustainable fossil free fuels for transportation.	http://www.f3centre.se/	TA	Ingrid Nyström ingrid.nystrom@f3centre.se	X			
22	FKG (Fordonskomponentgruppen)	FKG is the Scandinavian automotive supplier association, with headquarters in Gothenburg.	www.fkg.se	Pr	Fredrik Sidahl fredrik.sidahl@fkg.se +46 706 805953	X	X	X	X
23	Göteborg Energi	Göteborg Energi is Western Sweden's largest energy company and provides energy services, broadband, district heating, cooling, natural gas and the electricity supply network.	www.goteborgenergi.se	O	Tel +4631633000	X			
24	Gothenburg City	Gothenburg City is actively involved in policy work and development projects relating to safe and green vehicles, often executed through Business Region Göteborg, Lindholmen Science Park or the Traffic and Public Transport Authority.	www.goteborg.se	PA	Suzanne Andersson Suzanne.Andersson@trafikkontoret.goteborg.se	X	X	X	X
25	Hardstaff AB 556814-7473 Owned by http://www.hardstaffgroup.co.uk	The Hardstaff Group have opened Hardstaff AB, a new company set up to install the Hardstaff Dual Fuel Technology onto new Volvo vehicles.	http://www.hardstaffgroup.co.uk	LE	Fletcher, Trevor Lee, CEO Hardstaff AB Box 8906, Göteborg +46-31-53 67 03	X			
26	HiQ	HiQ is an IT and management consultancy firm specialising in communication, software development and business-critical IT.	www.hiq.se	ME				X	
27	Innovatum Technology Park	Innovatum Technology Park contains a science centre, a project arena and an incubator, located inTrollhättan. The the three focus areas are production technology, energy- and environmental technology and audiovisual technology.	www.innovatum.se	O	Tore Helmersson, tore.helmersson@innovatum.se, +46520289301	X	X	X	X
28	KCK – Competence Centre for Catalysis	The Competence Centre for Catalysis, KCK, is since 1995 an interdisciplinary research centre within heterogeneous catalysis at Chalmers.	http://www.kck.chalmers.se/	TA	Magnus Skoglundh skoglund@chalmers.se	X			

	Player	Short Description	Website	Stakeholder type	Contact person	Gr	NBM	C	S
29	Lindholmen Science Park	LSP is a centre for research and development projects with partners in industry, institutes, public sector and universities. LSP focuses on three areas: Mobile Internet, Intelligent vehicles and transport systems, Modern media and design.	www.lindholmen.se	O	Niklas Wahlberg, niklas.wahlberg@lindholmen.se, +46317647060	X	X	X	X
30	Lindholmen Science Park, Closer	Closer is an arena within LSP financed by VINNOVA and The Swedish Transport Administration. It is a national resource for triple helix collaboration in the field of transport efficiency.	http://www.lindholmen.se/sv/vad-vi-gor/closer	O	Jerker Sjögren, +46317647002, jerker.sjogren@lindholmen.se	X	X	X	X
31	Lindholmen Science Park, Test Site Sweden (TSS)	TSS is a national project (situated at LSP) and a demonstration and testing arena for joint research projects in safety, the environment and Intelligent Transportation Systems (ITS).	http://www.testsitesweden.com	O	Peter Öhman, +46 31 764 70 14, peter.ohman@lindholmen.se	X	X	X	X
32	Mecel Aktiebolag 556258-8896 Delphi International SARL	Mecel is a systems and software development company developing solutions for the automotive industry.	http://www.mecel.se/	SE	Häggström, Henrik owner Mecel AB Box 140 44 SE-400 20 Gothenburg Sweden phone: +46 31 720 44 00			X	
33	Mutual Benefits AB	Mutual Benefits is a Gothenburg-based company that offers technology management services within the fields of Energy, Automotive industry and Medtech.	http://www.mbits.se/	SE				X	
34	National Electric vehicle Sweden AB	Bought Saab in June 2012, owned by Japanese and Chinese interests, will develop and manufacture electric vehicles.	http://www.saabcars.com/	SE	National Electric Vehicle Sweden AB Saabvägen 5 SE-461 38 Trollhättan Sweden Telephone: +46 (0) 520 850 00	X	X	X	X

	Player	Short Description	Website	Stakeholder type	Contact person	Gr	NBM	C	S
35	Pilotfish Networks AB Europanel Aktiebolag 556565-2954	Pilotfish offers vehicle gateways and tailored services to bus operators in public transport.	http://www.pilotfish.se	SE	Nordenfelt, Erik Gabriel, CEO Pilotfish Networks AB Viktoriagatan 3 SE-411 25 Göteborg Sweden +46 31 339 6660			X	
36	QRTECH	QRTECH specializes in electronic and software development: product development, consulting services, advanced engineering and product supply and support.	http://www.qrtech.se/	SE				X	
37	Region Västra Götaland	Region Västra Götaland was formed in 1999 as one of Sweden's first two self-governing regions. The assignment is to provide efficient, high quality healthcare as well as promoting growth and sustainable development.	www.vgregion.se	PA	Hanna Blomdahl, hanna.blomdahl@vgregion.se, +46760517542	X	X	X	X
38	Safer – Vehicle and Traffic Safety Centre	SAFER provides multidisciplinary research and collaboration to eliminate fatalities and serious injuries, with the aim to make Swedish society, academy and industry a world leader in vehicle and traffic safety.	http://www.chalmers.se/safer/EN/	TA	Anna Nilsson-Ehle anna.nilsson-ehle@chalmers.se			X	X
39	Semcon	Semcon is a global technology company active in the areas of engineering services and product information.	www.semcon.se	ME				X	
40	SHC - Swedish Hybrid Vehicle Centre	The Swedish Hybrid Vehicle Centre (SHC) is a national competence centre for the development of electric and hybrid vehicles, hosted by Chalmers.	http://www.chalmers.se/shc	TA	Anders Grauers anders.grauers@chalmers.se	X		X	
41	Software Center Chalmers	The centre is hosted by Chalmers University of Technology, at the department of Computer Science and Engineering (D&IT). The Mission is to contribute to maintaining and strengthen the leading position of Sweden in engineering industrial software-intensive products.	www.chalmers.se	TA	Jan Bosch, jan.bosch@chalmers.se, 031-7725716 Jörgen Hansson, jorgen.hansson@chalmers.se, 031-7721074			X	

	Player	Short Description	Website	Stakeholder type	Contact person	Gr	NBM	C	S
42	SP - Technical Research Institute of Sweden	SP is one of Sweden's largest research institutes with development working areas being concentrated particularly upon Active safety, Lightweight designs, Electric vehicles, Communication, Alternative fuels.	http://www.sp.se	R		X	X	X	X
43	Swerea	The Swerea Group creates and disseminates research results within materials sciences, process technology, product engineering and manufacturing engineering. Swerea IVF and parts of Swerea SICOMP are located to Gothenburg.	www.swerea.se	R		X	X	X	X
44	The Department of Chemical and Biological Engineering at Chalmers University of Technology	The department for Chemical and biological engineering promotes research and education for sustainable development.The research ranges from natural science and bioscience, applied chemistry and biotechnology to chemical engineering.	http://www.chalmers.se/chem/EN	TA		X			
45	Västtrafik	Region Västra Götaland is since January 2012 the sole owner of the public transport company Västtrafik. Västtrafik is the second largest public transport company in Sweden.	www.vasttrafik.se	O	Leif Magnusson, leif.magnusson@vgregion.se, +4610 - 4411238	X	X	X	X
46	Vätgas Sverige (Hydrogen Sweden)	Hydrogen Sweden is a non-profit organisation, located in Gothenburg, with the mission to facilitate the introduction of hydrogen as an energy carrier in Sweden.	www.vatgas.se	O	Björn Aronsson, +46 31334 3773, bjorn.aronsson@vatgas.se	X			
47	VBG Truck Equipment AB	VBG Truck Equipment is an internationally leading supplier of coupling equipment for truck and heavy trailers.	http://www.vbggroup.com	ME					X
48	VCC	The Volvo Car Corporation is a global company, manufacturing cars and developing services for customers in about 100 countries.	www.volvocars.com	LE	Tord Hermansson thermans@volvocars.com	X	X	X	X

	Player	Short Description	Website	Stakeholder type	Contact person	Gr	NBM	C	S
49	Vehco AB 556614-1205	Vehco delivers mobile computing solutions to logistics companies	http://vehco.se/	SE	Headquarter Vehco AB Falkenbergsgatan 3 412 85 Göteborg Magnus Orrebrant, CEO +46-31-64 51 04	X		X	
50	Vicura AB 556821-9025	VICURA is a consultancy who develop complete systems or subcomponents within transmission for the international automotive industry. Vicura is a spin-off of the transmissions development department built up at Saab while under the ownership of GM.	http://www.vicura.se/	SE	Vicura AB Dennis Lundgren, CEO Flygfältsvägen 9 SE-461 38 Trollhättan Sweden Phone : +46 520 29 00 00 Sales@Vicura.se	X			
51	Viktoriainstitutet	Viktoria institute is a non-profit IT-research institute with head quarter located at Lindholmen in Gothenburg in Sweden, focusing on automotive and transport informatics.	http://www.viktoria.se	R	Kent-Eric Lång kent-eric.lang@viktoria.se	X	X	X	X
52	VTI	VTI, the Swedish National Road and Transport Research Institute is a government agency under the Ministry of Enterprise, Energy and Communications.	www.vti.se	R		X	X	X	X

A.2. Mov'eo (Paris region and Upper Normandie)

Table A.b: Stakeholder list: Mov'eo

	Player	Short Description	Website	Table A - Stakeholder type	Contact person	GREEN	NEW BUSINESS MODELS & MOBILITY SERVICES	CONNECTIVITY	SAFETY
1	4C ECOMOBILE	4C Ecomobile develops an urban ecological vehicle using range extender, inovative materials, a new chassis concept , eco-design and bamboo…		SE	Jean-Philippe THOME jpthome@4c-ecomobile.com 01 39 19 65 68	X			
2	ACB ENGINEERING	Services and sale of solutions developed by ACB in the field of acoustic imaging. Localization of sound sources of all sizes over large frequency ranges and of unsteady type using portable tools.	www.acb-engineering.fr	SE	Benoit VINCENT contact@acb-engineering.fr 06 81 95 38 36	X			
3	ADEAR ROUEN DÉVELOPPEMENT	ADEAR Rouen Developpement works with enterprises and those promoting new projects, to help them establish and then expand their business in Rouen, a densely occupied area at the centre of the Seine corridor, ideal for the start-up and subsequent expansion of tertiary, logistic, industrial and innovative activities	www.rouen-developpement.com	DA	Olivier THIERRY o.thierry@rouendev.com +33 2 32 81 20 35	X	X	X	X
4	ADEME	French Environment and Energy Management Agency	www.ademe.fr	PA	Gabriel PLASSAT gabriel.plassat@ademe.fr	X	X	X	X

	Player	Short Description	Website	Stakeholder type	Contact person	Gr	NBM	C	S
5	ADM CONCEPT	ADM CONCEPT is efficient for creating all small assemblies containing metal, plastic, electromechanisms and electronics. Studies and manufacturing in molded plastic automotive parts: Adaptors for smartphones and tablet PC, Car sharing kit for electric car…	www.adm-france.com	SE	Dominique MOCQUARD dominique.mocquard @adm-france.com +33 1 39 30 15 40	X	X	X	
6	ADVANCITY	Green Technologies and sustainable cities cluster spanning buildings, infrastructures, urban development and engineering in technologies and services to meet the challenges of urban living and mobility, with the emphasis on sustainable development	www.advancity.eu	Pr	Thierry DELARBRE +33 1 45 92 67 51 thierry.delarbre@advancity.eu	X	X	X	X
7	AIRCELLE	Aircelle (SAFRAN Group) is one of the leading players in the global nacelle market	www.aircelle.com	LE	Eric MASSÉ eric.masse@aircelle.com +33 2 32 79 43 44	X			
8	AKKA	AKKA Technologies, a high-technology and engineering Consultancy, is providing guidance to key accounts across the various stages of their projects, from R&D and design to assembly-line production	www.akka.eu	LE	Marc BOYER m.boyer@akka.eu +33 1 39 30 77 34	X	X	X	X
9	ALLIO	ALLIO is specialized in the design and manufacturing of all types of tools for the industrialization of multi-material elementary parts , sub-assemblies, assemblies ,modelling for casting, Machining, assembly, control…	www.groupe-allio.com	SE	Guillaume ALLIO guillaume.allio@snpmr.fr +33 1 39 93 60 00	X			
10	ALTRAN TECHNOLOGIES	ALTRAN is a global leader in innovation and high-tech engineering consulting. It accompanies its clients in the creation and development of their new products and services	www.altran.com	LE	Nathalie PICHERY nathalie.pichery@altran.com +33 1 46 17 46 17	X	X	X	X
11	AMPTEC	AMPTEC is an engineering consulting firm in power electronics and electrical systems	www.amptec.fr	SE	Ménouar AMEZIANI contact@amptec.fr +33 6 22 46 22 47	X			
12	ANR	The French National Research Agency. Project-based funding to advance French research	www.agence-nationale-recherche.fr	PA	Arnaud TORRES arnaud.torres@agence recherche.fr	X	X	X	X

	Player	Short Description	Website	Stakeholder type	Contact person	Gr	NBM	C	S
13	APS	APS develops, advices and applies high-tech surface coatings for its clients in all industrial sectors	www.aps-coating.com	SE	Philippe SPILERS pspilers@aps-internl.com +33 1 60 37 50 18	X			
14	ARD ÎLE-DE-FRANCE	The Paris Region Economic Development Agency was set up to match businesses' needs and the regional offer	www.paris-region.com	DA	Laurence CURTI lcurti@paris-region.com +33 1 58 18 69 34	X	X	X	X
15	AREELIS TECHNOLOGIES	Engineering company specialized in fluid dynamics and energetics	www.areelis.com	SE	Eric ROULAND eric.rouland@areelis.com +33 2 32 95 36 70	X			
16	ARIAMIS ENGINEERING	Engineering company with expertise on powertrains	www.ariamis-eng.com	SE	Richard KOT r.kot@ariamis-eng.com 33 9 64 27 95 30	X			
17	ARKEMA	Arkema is a global producer of industrial chemicals, performance products and vinyl products	www.arkema.com	LE	Marc AUDENAERT marc.audenaert@arkema.com +33 2 32 46 68 08	X			
18	ARMINES - Centre de Gestion Scientifique	Modelling of innovative design and management of innovation	www.cgs-mines-paristech.fr	R	Armand Hatchuel armand.hatchuel@mines-paristech.fr	X		X	X
19	ARMINES - Centre de Robotique	Robotic Lab working in research themes that apply to the concept of LaRA (Automated Road)	www.caor.mines-paristech.fr	R	Arnaud DE LA FORTELLE arnaud.de_la_fortelle@mines-paristech.fr +33 1 40 51 94 08			X	
20	ARMINES - Centre de Sociologie de l'Innovation	Work undertaken at the Center for the Sociology of Innovation concerns scientific, technical and cultural innovation. Rather than focusing on a traditional opposition between basic and applied research, the Center emphasizes a reflexive conception of the relationships with the actors studied	www.csi.ensmp.fr	R	Philippe MUSTAR philippe.mustar@mines-paristech.fr	X	X	X	X

	Player	Short Description	Website	Stakeholder type	Contact person	Gr	NBM	C	S
21	ARMINES - Centre des Matériaux	Research centres of the Ecole des Mines de Paris, associated to the CNRS. Its research focuses on all types of materials of industrial interest	www.mat.ensmp.fr	R	Jacques RENARD jacques.renard@ensmp.fr Tel: +33 1 60 76 30 31	X		X	
22	ASTECH	Aeronautics cluster in Paris Region bringing together all the major regional players devoted to aircraft engines, satellite launch systems and business aviation	www.pole-astech.org	Pr	Gérard LARUELLE +33 1 46 23 50 95 gerard.laruelle@pole-astech.org	X	X	X	X
23	AUTOLIV	Worldwide leader in automotive safety, a pioneer in both seatbelts and airbags	www.autoliv.com	LE	Michel KOZYREFF Michel.Kozyreff@autoliv.com +33 2 30 17 85 20				X
24	AVERE FRANCE	AVERE France association promote the purchase and the use of electric and hybrid vehicles	www.avere-france.org	Pr	Charlotte de SILGUY charlotte.desilguy@avere-france.org +33 1 53 25 00 61	X			
25	AXTRID	Multidisciplinary engineering enterprise	www.axtrid.fr	SE	Jean EHRMANN jean.ehrmann@axtrid.fr +33 1 61 37 45 46	X			
26	BAQC	Infrastructure for electric vehicles	www.baqc.eu	SE	Christophe GAILLARD christophe.gaillard@baqc.eu +33 2 32 10 38 53	X			
27	BENTELER	developement and production of components, modules and systems for ride and handling, safety and emission	www.benteler.de	LE	Jean-Noel SAVIN savin@normydro.fr +33 2 32 58 01 54	X			
28	BERTRANDT	Bertrandt is one of the leading companies for development services on every aspect of mobility and in future-oriented industries such as electrical engineering, energy, mechanical engineering	www.bertrandt.com	LE	Frédéric STRADY frederic.strady@fr.bertrandt.com Tel: +33 1 69 35 15 08	X			
29	CADLM	Company specialized in virtual prototyping: Transforming real world data into industrial predictive models and “business intelligence” patterns	www.cadlm.com	SE	Alain BENCHISSOU a.benchissou@cadlm.fr	X			

	Player	Short Description	Website	Stakeholder type	Contact person	Gr	NBM	C	S
30	CAP DIGITAL	French business cluster for digital content and services in Paris and the Ile de France region.	www.capdigital.com	Pr	Patrick COCQUET +33 1 40 41 11 63 patrick.cocquet@capdigital.com		X	X	
31	CAR ET D	Car&D proposes creative solutions and technical excellence in road vehicles	www.car-d.fr	SE	Gilles SCHAEFER gilles.schaefer@car-d.fr +33 9 62 20 57 27	X			X
32	CCI DE PARIS	Chamber of Commerce	www.ccip.fr	PA	Stéphanie LORIOT sloriot@ccip.fr	X	X	X	X
33	CCI DE ROUEN	Chamber of Commerce	www.rouen.cci.fr	PA	Evelyne CATAN evelyne.catan@rouen.cci.fr +33 2 35 14 37 81	X	X	X	X
34	CCI DE VERSAILLES VAL D'OISE	Chamber of Commerce	www.versailles.cci.fr	PA	Odette de AZEVEDO O_DeAzevedo@versailles.cci.fr +33 1 30 75 35 37	X	X	X	X
35	CCI DU HAVRE	Chamber of Commerce	www.havre.cci.fr	PA	Dominique CESAR dcesar@havre.cci.fr +33 2 35 55 26 03	X	X	X	X
36	CEA LIST	the CEA LIST Institute focuses its research activities on developing innovative technologies for smart and complex systems	www.list.cea.fr	R	Jean-Marc ALEXANDRE jean-marc.alexandre@cea.fr +33 1 69 08 27 05	X		X	
37	CEESAR	European centre of studies on safety and risk analysis: Accidentology, Biomechanics, Driver behaviour	www.ceesar.fr	R	Philippe TOUSSAINT philippe.toussaint@ceesar.asso.fr +33 1 76 87 36 67				X
38	CENTRE FRANCILIEN DE L'INNOVATION	The Paris Region Innovation Center supports SMEs and help them making their innovation project a reality, spreads responsible innovation best practicesand collaboration with academic research, networks public and private innovation actors	www.innovation-idf.org	DA	Sabine ENJALBERT sabine.enjalbert@innovation-idf.org +33 1 40 41 58 58	X	X	X	X

	Player	Short Description	Website	Stakeholder type	Contact person	Gr	NBM	C	S
39	CEREMH	Center of research and innovation to improve the mobility of disabled and elderly people	www.ceremh.org	R	Claude DUMAS claude.dumas@ceremh.org +33 1 39 25 49 87		X		X
40	CERTAM	Aerothermodynamic and Engine Technological Design and Research Center	www.certam-rouen.com	R	Frédéric DIONNET frederic.dionnet@certam-rouen.com +33 2 32 95 40 01	X			
41	CETH2	CETH2 develops, manufactures and sells innovative CO_2 free on site hydrogen generation solutions for industrial and energy applications	www.ceth.fr	ME	Fabien AUPRETRE fabien.aupretre@ceth.fr 01 69 63 26 22	X			
42	CETIM	Technical Centre for Mechanical Industry. It provides companies with means and competences to improve their competitiveness, take part in standardisation, establish a relationship between scientific research and industry, promote technical progress, provide assistance to improve performance and guarantee quality	www.cetim.fr	Pr	Bruno RESTIF Bruno.Restif@cetim.fr	X			
43	CEVAA	Center of expertises in NVH domains	www.cevaa.com	R	Martial BELHACHE m.belhache@cevaa.com +33 2 32 91 73 50	X			
44	CITI Technologies	CITI Group provides its customers with operational engineering services and manages all aspects of complex and innovative technology projects	www.citi-technologies.com	ME	Francis PINTURAUD francis.pinturaud@citi-technologies.com +33 1 30 79 19 10	X	X	X	X
45	CITILOG	Citilog is a leading provider of advanced video-based monitoring and surveillance products that enable traffic, security and safety management operators to identify incidents in real time	www.citilog.fr	SE	Miguel PINTADO mpintado@citilog.fr +33 1 41 24 34 54		X	X	
46	CITYPASSENGER	Global provider of complete network solutions and wireless communications	www.citypassenger.com	SE	Bruno DUVAL bduval@citypassenger.com +33 1 60 13 85 93			X	
47	CIVITEC	Platform for modelling and simulation of multi-frequency environment and multi-technology sensors	www.civitec.net	SE	Philippe PRALUS philippe.pralus@civitec.com +33 4 77 69 02 83			X	

	Player	Short Description	Website	Stakeholder type	Contact person	Gr	NBM	C	S
48	CNAM	Institution dedicated to life long higher education and training, research and innovation	www.cnam.fr	R	Clarisse ANGELIER clarisse.angelier@cnam.fr +33 1 58 80 88 03	X			
49	COMUTO	Carpooling: connect drivers with people looking for a ride	www.covoiturage.fr	SE	Frédéric MAZZELLA fm@comuto.com +33 9 65 35 94 46		X		
50	CONTINENTAL AUTOMOTIVE - Interior Division	Global automotive suppliers. The Interior division bundles together the full array of activities dealing with information management in vehicles	www.continental-automotive.com	LE	Dominique DOUCET Dominique.Doucet@continental-corporation.com +33 01 34 57 40 99			X	X
51	CONTROLSYS ENGINEERING	Power electronics expert, designer, manufacturer and supplier in power conversion products (DC and AC sources, frequency converters, electronic loads and test batteries)	www.controlsys.fr	SE	Jacques EMPINET jacques.empinet@controlsys.fr +33 1 30 64 12 55	X			
52	CORIA	Laboratory working in the field of Flow Turbulence and Combustion	www.coria.fr	R	Mourad BOUKHALFA boukhalfa@coria.fr +33 2 32 95 97 94	X			
53	CRITT ANALYSES ET SURFACES	Analyses & Surface laboratory is a technological resources and abilities center	www.analyses-surface.com	R	Tarik AIT-YOUNES tarik.ait-younes@crittas.com +33 2 32 25 04 00	X			
54	CTS Tracking	CTS provides GPS tracking and fleet management services to improve the efficiency of commercial fleets and reduce overall operating expenses	www.cts-consortium.com	SE	Xavier BRIERE x.briere@cts-tracking.com +33 2 32 74 49 25		X	X	
55	D2T	D2T is specialized in powertrain engineering, development and tuning of engines	www.d2t.com	ME	Gaetan MONNIER gaetan.monnier@d2t.fr +33 1 30 13 07 02	X			
56	D3 Group	Expertise in design and prototyping: 3D modeling, color & material, engineering, production, modeling manuel	www.numerodesign.fr	SE	Frédéric ROBIN frederic.robin@numerodesign.fr +33 1 30 64 83 64	X	X	X	X

	Player	Short Description	Website	Stakeholder type	Contact person	Gr	NBM	C	S
57	DASSAULT SYSTÈMES	Dassault Systèmes, the 3D Experience Company, provides business and people with virtual universes to imagine sustainable innovations	www.3ds.com	LE	Dominique FLORACK d-florack@dassault-data-services.fr +33 1 61 62 61 62	X	X	X	X
58	DBT	DBT provides turnkey charging infrastructure hardware and software, as well as integration services for every EV charging	www.dbt.fr	SE	Hervé BORGOLTZ e.borgoltz@dbt.fr	X			
59	DEHONDT	Design, manufacture and marketing of industrial machinery for natural fibers processing in textile applications, plasturgies and composite materials. Development of new composite materials reinforced by flax	www.dehondt-lin.com	SE	Guy DEHONDT developpement@dehondt-lin.com 02 35 38 68 38	X			
60	DELPHI France	Leading global supplier of electronics and technologies for automotive	www.delphi.com	LE	Tarek KITOUNI tarek.kitouni@delphi.com +33 1 49 90 45 46	X	X	X	X
61	DÉPARTEMENT DES YVELINES	The Yvelines is France's leading county in the automotive industry, where the French automotive industry's flagships originated and will continue to originate. In addition to major car manufacturers, a very comprehensive network of subcontractors and engineering consulting firms strive to develop, produce and innovate	www.automobile.yvelines.fr	PA	Christian BELEY cbeley@yvelines.fr +33 1 39 07 82 31	X	X	X	X
62	DEVELTER INNOVATION	Products and solutions for taking action on road accident prevention	www.develter.com	SE	Stéphane DEVELTER sdevelter@develter.com +33 1 30 48 55 30		X		X
63	DEVERYWARE	Deveryware is a young innovative company working on LBS technologies: Geolocation, POI, operators cell-id, GPS & smartphone devices…	www.deveryware.com	SE	Jacques SALOGNON jacques.salognon@deveryware.com +33 1 80 90 54 80		X	X	
64	DIEDRE DESIGN	Design Agency. To increase product value and brand recognition via the use of design	www.diedredesign.com	SE	François BURON diedre.service@wanadoo.fr +33 1 30 21 77 66	X	X	X	X
65	DJP	Expertise in composite structures, modelling and moulding	www.djp.fr	SE	Jean-Pierre MATTEÏ jp.mattei@djp.fr +33 1 46 82 73 20	X			

	Player	Short Description	Website	Stakeholder type	Contact person	Gr	NBM	C	S
66	DOTMOBIL	Fleet management systems	www.dotmobil.com	SE	Olivier ROSSINELLI orossinelli@dotmobil.com +33 1 47 60 18 52		X	X	
67	DOW KOKAM France	Dow Kokam develops and manufactures technologically advanced and economically viable battery solutions for the transportation, defense, industrial and medical industries	www.dowkokam.com	LE	Alain DOUARRE adouarre@dowkokam.com +33 1 69 75 88 52	X			
68	DYNALOGIC	Traffic engineering. The mission is to model the movement and project future demands and simulate traffic conditions (highways, transit systems, transport ...) to optimize the road improvements	www.dynalogic.fr	SE	Philippe MATTERA p.mattera@dynalogic.fr +33 1 40 34 31 13		X	X	
69	ECM	High technology engineering and consulting firm	www.ecm-be.com	ME	Gabriel OUZEN g.ouzen@ecm-be.com +33 1 30 70 16 00	X			
70	ECO TECHNILIN	Leading provider of natural fibre solutions	www.eco-technilin.com	SE	Karim BEHLOULI karim@eco-technilin.com +33 2 32 70 42 20	X			
71	ECOLE CENTRALE DE PARIS (ECP)	One of the oldest and most prestigious engineering schools in France. École Centrale Paris offers graduate degree programs as well as PhD opportunities. The ECP also hosts eight laboratories conducting research in Combustion, Industrial Engineering, Chimical Engineering...	www.ecp.fr	TA	Hervé BIAUSSER herve.biausser@ecp.fr	X			
72	ECOLE POLYTECHNIQUE	École Polytechnique is a world-class educational and research establishment, conveying a culture of excellence with a strong scientific leaning in the great Humanist tradition.	www.polytechnique.edu	TA	Romain BEAUME romain.beaume@polytechnique.org	X	X	X	X
73	ECOLE POLYTECHNIQUE - CRG	Management Research Center. A Chair in Innovation Management has been recently set up at the Ecole polytechnique with the sponsorship of french industrial firms	www.crg.polytechnique.fr	R	Romain BEAUME romain.beaume@polytechnique.org	X	X	X	X
74	ECOLE POLYTECHNIQUE - LMS	Solids Mechanics Laboratory	www.lms.polytechnique.fr	R	Patrick LE TALLEC patrick.letallec@polytechnique.fr	X			

	Player	Short Description	Website	Stakeholder type	Contact person	Gr	NBM	C	S
75	ECP - EM2C	Energetics and Combustion. The department's research activities revolve around three axes: "Combustion", "Unbalanced Plasma", the "Physics of Transfers" and a transversal activity "Applied Mathematics"	www.em2c.ecp.fr	R		X			
76	ECP - LGPM	Chemical Engineering: Materials surfaces and interfaces; transfers in multiphase environments, study and modeling of transfer phenomena in processes, life cycle of materials	ww.lgpm.ecp.fr	R		X			
77	ECP - MSSMAT	Mechanics, Structures and Materials: Mechanical behaviour of structures	www.mssmat.ecp.fr	R		X			
78	ECP - SPMS	Physical Properties of Materials and Modelling: Nanostructured functional materials for energy, dielectric materials for electroactive components, materials for hydrogen technologies	www.spms.ecp.fr	R		X			
79	EDF Direction Transports et Véhicules Electriques	Leading energy player, active in all major electricity businesses	www.edf.com	LE	Jean-Louis BERTHOU jean-louis.berthou@edf.fr +33 1 58 86 71 77	X			
80	EFE	Designer and Manufacturer of Pressure Sensors	www.efe-sensor.com	SE	StéphaneJOURDAN sjourdan@efe-sensor.com +33 2 32 22 35 11	X			
81	EGIS MOBILITE	Egis Mobility is an engineering company specialised in optimising travel. Expertise in Traffic and Mobility, Intelligent transport systems	www.egis-mobilite.com	ME	Martial CHEVREUIL martial.chevreuil@egis.fr +33 1 30 48 47 70		X	X	
82	EILEO	New carsharing technologies, hardware and software	www.eileo.com	ME	Arnaud LEJEUNE arnaud.lejeune@eileo.com +33 1 55 26 42 59		X	X	
83	EMC	Development and Test of powertrain systems	www.emcfrance.fr	SE	Geoffrey GAUDRE geoffrey.gaudre@emcfrance.fr +33 1 30 06 77 03	X			

	Player	Short Description	Website	Stakeholder type	Contact person	Gr	NBM	C	S
84	EMITECH	Environmental tests applicable to electrical and electronic equipments	www.emitech.fr	SE	Matthieu COGNET m.cognet@emitech.eu	X			
85	ENS CACHAN	Public institution of higher education and research	www.ens-cachan.fr	TA	Sami HLOUI hlioui@satie.ens-cachan.fr	X	X	X	X
86	ENS CACHAN - LMT	Laboratory of mechanics and technology	www.lmt.ens-cachan.fr	R	Sylvie LEROY sylvie.leroy@lmt.ens-cachan.fr	X			
87	ENS CACHAN - SATIE	Systems of Applications of Informational Technologies and Energy Laboratory	www.satie.ens-cachan.fr	R	Sami HLOUI hlioui@satie.ens-cachan.fr	X		X	
88	ENSAM	Ecole Nationale Supérieure d'Arts et Métiers is a prestigious engineering school	www.ensam.fr	TA	Jean-Marie CASTELAIN relations.internationales@ensam.eu	X	X	X	X
89	ENSAM - DynFluid	Fluid dynamics: Aerodynamics, Turbomachinery, Aeroacoustics, Instabilities Modeling, Calculation	www.dynfluid.eu	R	Paola CINNELLA labo-dynfluid@paris.ensam.fr	X			
90	ENSAM - LBM	Biomecanics Laboratory: Application of mechanics methods to living systems (human): Tissue biomechanics, osteoarticular biomechanics, biomechanics of impacts and comfort	http://bio-web.paris.ensam.fr	R	Wafa SKALLI wafa.skalli@paris.ensam.fr				X
91	ENSAM - LCPI	Product Design and Innovation Laboratory	http://cpi.paris.ensam.fr	R	Robert DUCHAMP robert.duchamp@ensam.eu		X		
92	ENSCP	The College trains chemical engineers and chemists to assume high level positions in the chemical and related industries	www.enscp.fr	TA	Christophe THOMAS service-ri@chimie-paristech.fr	X			
93	ENSCP - LECIME	Electrochemistry, chemistry of interfaces and modelling for energy laboratory	-	R	Michel Cassir michel.cassir@chimei-paristech.fr	X			
94	ENSEA	Engineering school in Electronics	www.ensea.fr	TA	PierrePOUVIL pouvil@ensea.fr +33 1 30 73 62 15	X		X	X

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95	ENSTA	General Engineering school (mechanics, energy, IT, electronics)	www.ensta.fr	R	Omar HAMMAM omar.hammami@ensta.fr +33 1 45 52 54 24	X	X	X	X
96	ENSTA - UEI	Laboratory of Electronics and Computer Engineering. Electronic architectures, signal and image processing, and robotics	http://uei.ensta-paristech.fr	R	Bruno MONSUEZ bruno.monsuez@ensta.fr	X		X	
97	ENSTA - UME	Department of Mechanical Engineering. Solid and fluid mechanics: thermomechanical and multiphysics coupling, fatigue and durability of structures, vibroacoustics and nonlinear vibrations, turbulence and separated flows	http://ume.ensta-paristech.fr	R	Antoine CHAIGNE antoine.chaigne@ensta.fr	X			
98	ENVIRONNEMENT SA	Systems for the measurement of exhaust gas emission	www.environnement-sa.com	SE	AlainPOMMEPUY a.pommepuy@environnement-sa.com	X			
99	ESI GROUP	Software editor for the numerical simulation of prototype and manufacturing process engineering in applied mechanics	www.esi-group.com	ME	Vincent CHAILLOU vjc@esi-group.com +33 1 41 73 58 10	X			
100	ESIGELEC	Engineering school in Electronics, telecommunications and IT	www.esigelec.fr	TA	Eric DURIEUX eric.durieux@esigelec.fr	X		X	
101	ESME SUDRIA	Engineering school specialised in the field of energy, electronics and information sciences	www.esme.fr	TA	Hervé LABORNE laborne@esme.fr +33 1 56 20 62 07	X		X	
102	ESTACA	Engineering school specialised in the fields of aeronautics, automotive, space and guided transport industries	www.estaca.fr	TA	Thierry FOURDRAIN tfourdrain@estaca.fr	X	X	X	X
103	ESTECH	High technology design and prototyping company	www.estech-design.com	SE	Baptiste HANNEBICQUE bhannebicque@estech-design.com +33 1 39 07 51 40	X			
104	ETUD INTEGRAL	Engineering company: design and prototyping	www.etud-integral.com	SE	Xavier FLAMENT xavier.flament@etud-integral.fr +33 1 30 69 08 58	X			

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105	Euro Blood Tracking Services (EBTS)	Conception, development and commercialization of specific and equipped vehicles (electronic components,…) to guaranty cold chain traceability (ex: blood transport).	http://ebts-consortium.fr	SE	Xavier BRIERE x.briere@ebts-consortium.com		X	X	
106	EXTENDE	Simulation and Non Destructive Evaluation (NDE) development methodology	www.extende.com	SE	Philippe DUBOIS philippe.dubois@extende.com +33 1 77 93 21 71	X			
107	FAAR INDUSTRY	Company specializes in the development and production of embedded electronic control systems for low volume automotive applications	www.faar-industry.com	SE	Khalid AYOUCHE khalid.ayouche@faar-industry.com +33 1 43 11 09 62	X			
108	FAURECIA	Global supplier, specialist in the engineering and production of automotive solutions, holds global leadership status in each of its core businesses: Automotive Seating, Emissions Control Technologies, Interior Systems and Automotive Exteriors	www.faurecia.com	LE	Christophe AUFRERE christophe.aufrere@faurecia.com +331 69 92 34 35	X			X
109	FAURECIA - Automotive Exteriors			LE		X			
110	FAURECIA - Automotive Seating			LE		X			X
111	FAURECIA - Emissions Control Technologies			LE		X			
112	FAURECIA - Interior Systems			LE		X			X
113	GDF SUEZ	Energy and environmental services	www.gazdefrance.com	LE	Hélène PIERRE helene.pierre@gdfsuez.com +33 1 49 22 48 34	X			
114	GEENSYDE	Global system engineering approaches for design and development of efficient critical embedded systems	www.geensyde.fr	SE	Franck BURIDAN franck.buridan@geensyde.fr			X	

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115	GKN DRIVELINE	World's leading supplier of automotive driveline systems and solutions	www.gkndriveline.com	LE	Bertrand SELMER bertrand.selmer@gkndriveline.com +33 1 39 79 71 72	X			
116	GLOBAL BIOENERGIES	Global Bioenergies develops a unique process to produce isobutene biologically from renewable resources	www.global-bioenergies.com	SE	Marc DELCOURT marc.delcourt@global-bioenergies.com +33 1 64 98 20 50	X			
117	GROUPE CHRONOS	Chronos is a research firm specializing in sociology and innovation advising in mobility	www.groupechronos.org	SE	Bruno MARZLOFF contact@groupechronos.org +33 1 42 56 02 45		X		
118	HITACHI	Information & Telecommunication Systems Company	www.hitachi-eu.com	LE	StéphaneAMARGER,stephane.amarger@hitachi-eu.com'+3301 39 45 19 80			X	
119	IAV France	Automotive Engineering Company	www.iav.de	LE	Thomas ROELLE thomas.roelle@iav.de +33 1 30 12 00 01	X		X	X
120	IFP ENERGIES NOUVELLES	Public-sector research, innovation and training center active in the fields of energy, transport and the environment	www.ifpenergiesnouvelles.com	R	André PRIEUR andre.prieur@ifpen.fr +33 1 47 52 51 24	X			
121	IFP SCHOOL	IFP School offers applied graduate programs, providing students and young professionals from all over the world with education in the fields of energy (oil, gas, petrochemicals, powertrains, new energy technology)	www.ifp-school.com	TA	Pierre DURET pierre.duret@ifpenergiesnouvelles.fr	X			
122	IFSTTAR	French institute of science and technology for transport, development and networks. Ifsttar conducts applied research and expert appraisals in the fields of transport, infrastructure, natural hazards and urban issues	www.ifsttar.fr	R	Jean-Marc BLOSSEVILLE jean-marc.blosseville@ifsttar.fr +33 1 40 23 29 00	X	X	X	X

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123	IFSTTAR - LEPSI	Laboratory for road Operations, Perception, Simulators and Simulations	www.inrets.fr/linstitut/unites-de-recherche-unites-de-service/lepsis	R	Didier AUBERT didier.aubert@ifsttar.fr		X		X
124	IFSTTAR - LIVIC	Research laboratory for advanced driving assistance systems	www.inrets.fr/linstitut/unites-de-recherche-unites-de-service/***livic***	R	Jacques EHRLICH jacques.ehrlich@ifsttar.fr	X		X	
125	IFSTTAR - LPC	Laboratory of driver psychology: The research conducted at the LPC is aimed at identifying and analyzing the determinants of road users behavior or changes in behavior through the study of cognitive, perceptual, emotional and motivational processes	www.inrets.fr/linstitut/unites-de-recherche-unites-de-service/lpc	R	Patricia DELHOMME patricia.delhomme@ifsttar.fr		X		X
126	IFSTTAR - LVMT	Research Laboratory addressing the City, Mobility and Transportation	www.lvmt.fr	R	Jean LATERRASSE jean.laterrasse@ifsttar.fr		X		
127	IFSTTAR -LTN	New technologies Laboratory dedicated to Power Electronics for transports. Technological approach on components (semiconductor, supercap, fuel cell)	www.inrets.fr/linstitut/unites-de-recherche-unites-de-service/ltn-satory	R	Gérard COQUERY gerard.coquery@ifsttar.fr	X			
128	INDUCT	High tech company with expertise in robotics and embedded systems: cybercars and contactless charging	www.inductsystem.com	SE	Pierre LEFEVRE plefevre@induct.fr	X	X	X	

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129	INERGY	Plastic fuel system supplier (Plastic Omnium Group)	www.inergyautomotive.com	LE	Jean-Bernard LEPAGE Jean-Bernard.Lepage@inergyautomotive.com +33 1 55 46 62 42	X			
130	INRIA	Public science and technology institution dedicated to computational sciences	www.inria.fr	R	Isabelle RYL isabelle.ryl@inria.fr +33 1 39 66 52 12			X	
131	INSA ROUEN	Engineering School	www.insa-rouen.fr	R	Jean-Louis BILLOËT direction@insa-rouen.fr +33 2 35 52 83 11	X	X	X	X
132	INSERM	National Institute of Health and Medical Research	www.inserm.fr	R	Michel AUBIER michel.aubier@bch.ap-hop-paris.fr	X	X		
133	INSTITUT D'OPTIQUE	Graduate school and research centre in optics	www.institutoptique.fr	R	Christian CHARDONNET christian.chardonnet@institutoptique.fr	X		X	
134	INSTITUT Jean le Rond d'Alembert	The Institute gathers 5 laboratories in basic and applied research: Laboratory of Mechanics Modeling, Laboratory of Physical Mechanics, Energy and Internal Fluid Mechanics Laboratory, Mechanics, Materials and Structures Laboratory	www.dalembert.upmc.fr/ijlrda	R	Philippe GUIBERT philippe.guibert@upmc.fr	X			
135	INSTITUT POUR LA VILLE EN MOUVEMENT	Launched by PSA Peugeot Citroën in June 2000, the Institut pour la ville en mouvement [City on the Move] seeks to contribute to the emergence of innovative solutions for urban mobilities.	www.ville-en-mouvement.com	Pr	Isabelle EDESSA isabelle.edessa@mpsa.com +33 1 56 47 36 81		X		
136	INSTITUT TELECOM	The Institut Telecom is a European benchmark in terms of higher education, research and innovation in information and communication science and technology	www.telecom-paristech.fr	R	Nunzio SANTORO nunzio.santoro@it-sudparis.eu +33 1 60 76 41 88			X	
137	INTEMPORA	Development and edition of multisensor software solutions. Main product: RTMaps (Real Time, Multisensor, Advanced Prototyping Software)	www.intempora.com	SE	Gilles MICHEL gilles.michel@intempora.com +33 1 41 90 08 49			X	X

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138	IRSEEM	Embedded Electronic Systems Research Institute	www.esigelec.fr/IRSEEM	R	Nicolas LANGLOIS nicolas.langlois@esigelec.fr +33 2 32 91 58 64	X		X	
139	JACRET TECHNOLOGIES	Supple mastic for high performance adhesion of materials	www.jacret.com	SE	Arnaud CURET arnaud_curet@jacret.com +33 1 34 38 80 46	X			
140	KEY'LIB	Car sharing services	www.keylib.fr	SE	Henri BACQUET henri.bacquet@keylib.fr		X		
141	KINTESYS	Powertrain engineering	www.kintesys.com	SE	Michel BLAYER, michel.blayer@kintesys.com +33 1 39 54 33 64	X			
142	KNOWLEDGE INSIDE	Knowledge Inside is a high-tech company. It proposes both an innovative and operational solution for the design and description of complex systems	www.k-inside.com	SE	Samuel BOUTIN sbo@k-inside.com +33 1 39 02 70 29	X		X	
143	LAB	Accident research, biomechanics and human behaviour lab	-	R	Anne GUILLAUME anne.guillaume@lab-france.com +33 1 76 87 35 18				X
144	LCIE	Conformity assessment (certification, inspection and testing), metrology, expert analysis for companies working in the field of electricity, electronics or related technologies	www.lcie.fr	LE	Philippe SISSOKO philippe.sissoko@lcie.fr +33 1 40 95 61 57	X			
145	LE HAVRE DÉVELOPPEMENT	Le Havre Développement federates the energies of the major institutional partners of Le Havre region to provide support and advice	www.havre-developpement.com	DA	Gérard MERCHER g.mercher@havre-developpement.com +33 2 32 74 00 22	X	X	X	X
146	LE HUB	Design and management of innovative information systems	www.lehub-agence.com	SE	Philippe BRZEZANSKI philippe@lehub-agence.com +33 1 71 19 78 22		X	X	

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147	LIFCO	Engineering powders surfaces and massive parts	www.lifco-industrie.com	SE	Constantin IACOB constantin.iacob@lifco-industrie.com +33 2 35 61 62 97	X			
148	LMM	Research and Development Company (AVL group). Core competencies lies in Internal Combustion Engines and their associated transmission	www.le-moteur-moderne.fr	ME	Pierre-Yves GEELS py.geels@le-moteur-moderne.fr +33 1 69 19 74 01	X			
149	LNE	National laboratory in metrology and testing	www.lne.fr	R	Jean-Luc LAURENT jean-luc.laurent@lne.fr +33 1 30 69 11 81	X			
150	LUMENEO	Automotive manufacturer of urban electric car	www.lumeneo.fr	SE	Daniel MOULENE d.moulene@lumeneo.fr +33 1 43 34 87 22	X	X		
151	MAGNA STEYR France	Magna design, develop and manufacture automotive systems, assemblies, modules and components, and engineer and assemble complete vehicles	www.magnasteyr.com	LE	Emile SOBA emile.soba@magnasteyr.com +33 1 64 53 48 90	X			
152	MAGNETI MARELLI	Global automotive industry supplier: design and production of hi-tech systems and components	www.magnetimarelli.com	LE	Jean-Philippe NEDJAR jean-philippe.nedjar@magnetimarelli.com	X			
153	MARBEN PRODUCTS	Key software solutions to telecom equipment manufacturers and services application providers for next generation service-driven networks	www.marben-products.com	SE	Philippe CUER philippe.cuer@marben-products.com '+33 4 27 82 60 62			X	
154	MARTEK POWER	Martek Power (Cooper Bussman Company) is a world leader in the design and manufacture of standard, modified-standard, and custom ac-dc power supplies,power converters and dc-ac power inverters	www.martekpower.com	LE	Joël LE NAN joel.lenan@martekpower.fr +33 1 69 88 83 97	X			
155	MATRA	Matra develops complete offers of light, electric vehicles for local communities, administrations, companies and individuals (electric bicycles and quadricycles)	www.matra.com	ME	Gilles CHELARD gilles.chelard@matra-ms.com +33 1 30 68 67 11	X	X		

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156	MERCURY TECHNOLOGIES	MT develops products and services architectures ibase on new usages. They are helping their customers to build secure architectures based on smart card	www.mercury-technologies.fr	SE	Pierre CREGO pierre.crego@mercury-technologies.fr +33 1 30 52 22 03			X	
157	MOTOR-E	Software and electronic skills. Creation of innovative elements to assist the development of clean vehicles	www.motor-e.fr	SE	Pascal MIELVAQUE pascal.mielvaque@motor-e.fr 06 48 18 56 80	X			
158	MULTITOLL SOLUTIONS	Expertise in the design, installation and maintenance of solutions for the identification, classification and management of vehicles. Solutions based on DSRC and/or RFID technology (free-flow tolling, electronic road pricing, urban tolls, parking, vehicle management and fare collection management)	www.multitoll.fr	SE	Christian DEFAY cdefayconsulting@wanadoo.fr +33 1 41 32 70 02		X	X	
159	MUSES	Automotive manufacturer of urban electric car	www.mooveco-muses.com	SE	Patrick SOUHAIT patrick.souhait@mooveco-muses.com +33 1 39 19 05 82	X	X		
160	NAVX	NAVX sources, aggregates and distributes geolocalized content that can be used in GPS and, more generally, in any location-aware devices	www.navx.com	ME	Florent BOUTELLIER f.boutellier@navx.com		X	X	
161	NEELOGY	Neelogy develops and commercializes innovative sensors for measuring both AC and DC current. Neelogy's technology is based on the Neel Effect™, which enables highly accurate, hysteresis-free measurement of alternating and direct currents	www.neelogy.com	SE	Thierry DAGRON thierry.dagron@neelogy.com +33 9 72 13 03 96	X			
162	NEWTECH CONCEPT	NT develops inductive charging stations	www.newtechconcept.fr	SE	Joseph IRVING jo@irving.fr	X			
163	NEXTER	Major player in the land defense industry	www.nexter-group.fr	LE	MichelBONNEFIS m.bonnefis@nexter-group.fr +33 1 30 97 37 39	X			
164	NEXYAD	NEXYAD developped special skills on data/signal/image analysis and understanding	www.nexyad.com	SE	Gérard YAHIAOUI gyahiaoui@nexyad.net +33 1 39 04 13 54			X	X

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165	NOMADIC SOLUTIONS	Nomadic Solutions designs and markets a complete range of material solutions in ecodriving (clean tech), in satellite geolocalisation (GPS), in telematics, tracability and security for company personnel working in the field	www.nomadicsolutions.biz	SE	Philippe ORVAIN ph.orvain@nomadicsolutions.biz +33 1 60 59 04 55			X	
166	NORMANDY DEVELOPMENT	Normandy Economic Development Agency	www.normandydev.com	DA	Jean-Jacques FOIGNET jjfoignet@normandydev.com	X	X	X	X
167	NOVALOG	French cluster on logistics systems	www.novalog.eu	Pr	Philippe DEYSINE pdeysine-nov@log-pole.eu	X	X	X	X
168	NXP	NXP Semiconductors provides High Performance Mixed Signal and Standard Product solutions that leverage its leading RF, Analog, Power Management, Interface, Security and Digital Processing expertise	www.nxp.com	LE	Guillaume STUTZ guillaume.stutz@nxp.com +33 1 40 99 52 74	X		X	
169	OKEY TECHNOLOGIE	Vehicle equipment for disabled drivers	www.okey.fr	SE	Philippe FORGES philippe.forges@wanadoo.fr +33 1 39 74 04 70		X		
170	OKTAL	Major provider in innovative and durable simulation software and systems (driving simulators)	www.oktal.fr	ME	Bruno FARGEON bruno.fargeon@oktal.fr +33 1 46 94 97 85				X
171	OPTOPARTNER	Solutions for numerical simulation, signal processing, embedded software and instrumentation	www.optopartner.com	SE	Julius LAWSON DAKU julius.lawson@optopartner.com +33 1 30 57 43 12			X	
172	Oseo	Public-sector institution dedicated to economic development — and a key source of financing and other support for SMEs	www.oseo.fr	PA	Chantal VALLADE chantal.vallade@oseo.fr	X	X	X	X
173	OVERSPEED ELECTRONIQUE	Electronic and ICT engineering	www.overspeed.fr	SE	Olivier GRENIER olivier.grenier@overspeed.fr +33 2 35 65 78 60			X	

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174	PANHARD GENERAL DEFENSE	Military vehicles manufacturer and Powertrain Testing Centre	www.panhard.fr	ME	Giacomo BRACCO giacomo.bracco@panhard.fr +33 1 60 82 48 68	X			
175	PARISTECH	ParisTech brings together twelve of the foremost French institutes of education and research. ParisTech, a research and higher education cluster of excellence, is composed of several French Grandes Écoles (Engineering and Business Schools) that cover a sweeping spectrum in science, technology and management	www.paristech.fr	TA		X	X	X	X
176	PREDA	Paris Region Economic Development Agency	www.paris-region.com	DA	Romain ERNY rerny@paris-region.com +33 1 58 18 69 39	X	X	X	X
177	PROMOLD	Consulting services in virtual injection moulding	www.promold.fr	SE	Jean-François LUYE luye@promold.fr +33 1 44 70 08 10	X			
178	PSA Peugeot Citroën	Major French carmaker	www.psa-peugeot-citroen.com	LE	Joseph BERETTA joseph.beretta@mpsa.com +33 1 40 66 32 13	X	X	X	X
179	PSA Peugeot Citroën - DCTC	Direction Chaîne de Traction et Châssis (Drivetrain and Chassis Division)	-	LE		X			
180	PSA Peugeot Citroën - DRIA	Direction Recherche et Ingénierie Avancée (Research and Advanced Engineering Division)	-	LE		X	X	X	X
181	PSA Peugeot Citroën - DSEE	Direction des Systèmes Electricité et Electronique (Electric & Electronic Systems Division)	-	LE		X		X	
182	PTV LOXANE	The PTV Group provides cutting-edge software technology and consulting: traffic development, transportation planning and modelling, traffic engineering, traffic management, public transport, traffic surveys and economic feasibility studies	www.ptvloxane.com	ME	Emmanuel CANAVELIS ecanavelis@ptvloxane.com +33 1 30 75 75 74		X	X	

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183	PVI	Electric powertrain systems and drivelines technology used by industrial vehicles (trucks and buses)	www.pvi.biz	SE	Pierre MIDROUILLET p.midrouillet@pvi.biz +33 1 64 42 14 00	X			
184	RÉGION HAUTE-NORMANDIE	French county of Upper Normandy. 1.8 million inhabitants	www.region-haute-normandie.com	PA	Alain LE VERN alain.levern@cr-haute-normandie.fr	X	X	X	X
185	RÉGION ÎLE-DE-FRANCE	French county of Paris Region. It is the wealthiest and most populated (11.7 million inhabitants) of the twenty-two administrative regions of France, composed mostly of the Paris metropolitan area	www.iledefrance.fr	PA	Jean-Paul PLANCHOU ruth.gomis@iledefrance.fr	X	X	X	X
186	RENAULT	Major French carmaker	www.renault.com	LE	Jean-Dominique WAGRET jean-dominique.wagret@renault.com +33 1 76 86 82 01	X	X	X	X
187	RENAULT - DIESE	Direction de l'Ingénierie Electrique et des Systèmes Electroniques (Electric & Electronic Systems Engineering Department)	-	LE		X		X	
188	RENAULT - DIM	Direction de l'Ingénierie Mécanique (Powertrain Engineering Department)	-	LE	Roger DECKERS roger.deckers@renault.com	X			
189	RENAULT - DIV	Direction de l'Ingénierie Véhicule (Vehicle Development Engineering)	-	LE	Nadine LECLAIR nadine.leclair@renault.com	X		X	X
190	RENAULT - DREAM	Direction de la Recherche, des Etudes Avancées et des Matériaux (Research, Advanced Studies and Materials Division)	-	LE	Rémi BASTIEN remi.bastien@renault.com	X	X	X	X
191	RJP MODELAGE	Expert in mechanics and thermo-compression, molding and felt cutting	www.rjp.fr	SE	Arnaud MONTESINO amontesino@rjp.fr +33 1 64 90 36 13	X			

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192	S2A	Wind tunel dedicated to aerodynamic and aeroacoustic studies	www.gies2a.fr	ME	Vincent MARTIN NEUVILLE vincent.martinneuville @gies2a.fr +33 1 30 07 24 31	X			
193	S2M	World leading magnetic bearing company (SKF group)	www.skf.com	LE	Eric HELENE eric.helene@s2m.fr +33 2 32 64 33 23	X			
194	SAB INDUSTRIES	Automotiveindustry supplier: fluid transfert, oil dipstick, bake cable guides…	www.sab-industries.com	SE	Charles-Eric DESTAILLEURS ce.destailleurs@sab-industries.com +33 2 32 52 13 77	X			
195	SAINT-GOBAIN SEKURIT	Saint-Gobain Sekurit is one of the leading glass manufacturers in the world	www.saint-gobain-sekurit.com	LE	Armand AJDARI armand.ajdari@saint-gobain.com +33 1 47 62 30 53	X			
196	SCHNEIDER ELECTRIC	Between energy generation and its usage, Schneider Electric provides technology and integrated solutions to optimise energy usage in markets like energy & infrastructure, industry, data centres, buildings and residential	www.schneider-electric.fr	LE	Sylvain PAINEAU sylvain.paineau@fr.schneider-electric.com +33 4 76 57 60 47	X			
197	SEGULA TECHNOLOGIES	Engineering and innovation consulting	www.segulagroup.com	LE	Olivier MINGUY olivier.minguy@segula.fr +33 1 39 44 20 44	X		X	X
198	SEINARI	Innovation Agency in Upper Normandy	www.seinari.fr	DA	Laurent PERRIN laurent.perrin@@seinari.fr	X	X	X	X
199	SEINE-MARITIME EXPANSION	Seine-Maritime Expansion is the Economic Development Agency of the Seine-Maritime County	www.sme76.fr	DA	Yann-Yves LE GOFFIC yann-yves.le-goffic@sme76.fr +33 2 35 59 19 12	X	X	X	X
200	SENDA	Senda provides software and services that powers the next generation of solutions for sustainable mobility in and around urban areas.	www.senda.fr	SE	Angel TALAMONA angel.talamona@senda.fr +33 1 55 26 43 89		X	X	

	Player	Short Description	Website	Stakeholder type	Contact person	Gr	NBM	C	S
201	SERMA TECHNOLOGIES	Specialised in electronics expertise and consulting	www.serma-technologies.com	ME	Matthieu CARRET m.carret@serma.com +33 1 40 95 61 76	X			
202	SHERPA ENGINEERING	Sherpa Engineering is a SSIS (Service Company for System Engineering)	www.sherpa-eng.com	SE	Patrick CHEVRIER p.chevrier@sherpa-eng.com +33 1 47 82 90 95	X			
203	SIA	French Society of Automotive Engineers. It organises technical events related to automotive industry	www.sia.fr	Pr, Ev	Daniel PFRIMMER daniel.pfrimmer@sia.fr +33 1 41 44 93 73	X	X	X	X
204	SIMPOE	SIMPOE offers easy to use, easy to learn and affordable software solutions to simulate the plastic injection manufacturing process	www.simpoe.com	SE	Alain DUBOIS adubois@simpoe.com +33 1 60 33 29 90	X			
205	SOPEMEA	Environment tests laboratory: From qualification to research and development tests, as well as tuning and « halt and hass » tests	www.sopemea.fr	ME	Philippe BIRR birr@sopemea.fr +33 1 45 37 64 34	X			X
206	SOUFFLERIE CLIMATIQUE ÎLE-DE-FRANCE	Wind tunnel mainly dedicated to aeraulic and thermal testing on a wide range of terrestrial vehicles	www.soufflerie-climatique.fr	ME	Michel FLOUTARD michel.floutard@soufflerie-climatique.fr +33 1 30 37 08 36	X			
207	SPIR.OPS	SpirOps is a Private Scientific Research Lab focused on Artificial Intelligence issues. It developed a patented Artificial Intelligence design paradigm called "Drive Oriented ™" that: - cleverly mimics the decision making process of human beings, - allows to create behaviors incrementally, - helps keep a linear complexity along the creation process. SpirOps also developed the first graphical editor for Artificial Intelligence behaviors	http://www.spirops.com	SE	Florian DECONINCK florian.deconinck@spirops.com		X	X	
208	ST MICROELECTRONICS	World leader in providing semiconductor products and technologies	www.st.com	LE	Jochen LANGHEIM jochen.langheim@st.com +33 1 58 07 75 25	X		X	

	Player	Short Description	Website	Stakeholder type	Contact person	Gr	NBM	C	S
209	STEP	Full electric cabs in Paris	www.taxioo.com	SE	Mathieu GARDIES mathieu.gardies@taxioo.com +33 1 40 13 53 17		X		
210	STRATE COLLEGE	Design school	www.stratecollege.fr	TA	Dominique SCIAMMA ds@stratecollege.fr +33 1 46 42 87 95	X	X	X	X
211	STYLE & DESIGN	Style agency, idea generator and creative design studio equipped with the latest technology in design and production	www.styleanddesign.fr	SE	Olivier MEYER olivier.meyer@styleanddesign.com +33 1 30 05 17 40	X			
212	SUPELEC	Engineering school in the forefront of the sciences of information, energy and systems	www.supelec.fr	TA	Gilles FLEURY gilles.fleury@supelec.fr	X		X	
213	SUPELEC - L2S	The Laboratory of Signals and Systems	www.lss.supelec.fr	R	Silviu-Iulian NICULESCU silviu-Iulian.niculescu@lss.supelec.fr			X	
214	SUPELEC - LGEP	Paris Laboratory of Electrical Engineering	www.lgep.supelec.fr	R	Claude MARCHAND Claude.Marchand@lgep.supelec.fr	X			
215	SUPMECA	Engineering school in Mechanical and Industrial Engineering	www.supmeca.fr	TA	Jean-Jacques MAILLARD jean-jacques.maillard@supmeca.fr +33 1 49 45 29 95	X			
216	SUPMECA - LISMMA	Engineering of mechanical systems and materials Laboratory: mechanical engineering, mechanics, mechatronics and industrial engineering	www.lismma.supmeca.fr	R	Jean-Yves CHOLEY jean-yves.choley@supmeca.fr +33 1 49 45 29 27	X			
217	SURVISION	Identification and tracking of vehicles. Image processing specialists	www.survision.fr	SE	Jacques JOUANNAIS jjo@survision.fr +33 1 47 51 04 80		X		

	Player	Short Description	Website	Stakeholder type	Contact person	Gr	NBM	C	S
218	SYNCHROTRON SOLEIL	SOLEIL is the French notional synchrotron facility, a multi-disciplimary instrument and research laboratory	www.synchrotron-soleil.fr	R	Philippe DEBLAY philippe.deblay@synchrotron-soleil.fr +33 1 69 35 90 05	X			
219	SYNERGETHIC / TILTER	Automotive manufacturer of urban electric vehicle (3 wheels with innovative tilting system): agile, safe and clean	www.tilter.fr	SE	Eric PROSÉ eprose@tilter.fr +33 1 30 22 02 22	X	X		
220	SYSTEMATIC PARIS REGION	French ICT Cluster bringing together more than 650 key players in the Paris Region area dedicated to optics, electronics and software technologies, and the design and management of complex systems	www.systematic-paris-region.org	Pr	François CUNY +33 1 69 81 65 61 f.cuny@systematic-paris-region.org	X		X	X
221	TECRIS	Specialist in Dependability and Risk management	www.tecris.fr	SE	Bruno MAJOT bruno.majot@tecris.fr +33 1 30 93 24 78	X	X	X	X
222	TEOS POWERTRAIN ENGINEERING	Powertrain engineering and project management	www.teos-engineering.com	ME	Jean-François NICOLINO jf.nicolino@teos-engineering.com +33 1 30 13 08 11	X			
223	TOTAL	Global energy producer and provider	www.total.com	LE	Pascal MANUELLI pascal.manuelli@total.com +33 1 41 35 87 31	X			
224	TRACETEL	Complete solutions for street fittings in the new personal-transportation sector (self-service vehicles and charging systems for electric vehicles.)	www.tracetel.com	SE	Jean EMERY jean.emery@tracetel.fr +33 6 13 45 45 49	X	X		
225	TRACING TECHNOLOGIES	Innovative company in the field of eco-design of materials and products. Marking of plastics in the mass , or surface to facilitate recycling and/or avoid counterfeiting	www.tracingtechnologies.fr	SE	Jean-Michel HACHIN jm.hachin@tracingtechnologies.fr	X			

	Player	Short Description	Website	Stakeholder type	Contact person	Gr	NBM	C	S
226	TRAFFIC FIRST	The company has a know-how in mobility management and end-user services with a real expertise on road networks and an innovative approach to modal shift from/to any transport mode. It has the vocation optimise mobility on all transportation networks by promoting the use of transport means that are more environmentally virtuous.	www.trafficfirst.com	SE	Mathieu TREUTENAERE mtr@trafficfirst.com +33 1 43 97 69 88		X	X	
227	TRAMICO	Tramico manufactures and converts a wide range of cellular materials for acoustic insulation, water proofing and air filtration applications	www.tramico.fr	LE	Patrick MICHELETTI pmicheletti@thevitagroup.com +33 2 32 47 82 85	X			
228	UNIVERSITE DE ROUEN		www.univ-rouen.fr	TA	Jean-Marc SAITER jean-marc.saiter@univ-rouen.fr +33 2 32 95 50 85	X	X	X	X
229	UNIVERSITE DE ROUEN - LITIS	Laboratory working in the field of computer science, data processing ans systemes	www.litislab.eu	R	Abdelaziz BENSRHAIR abdelaziz.bensrhair@insa-rouen.fr +33 2 32 95 98 72			X	
230	UNIVERSITE DE VERSAILLES SAINT-QUENTIN-EN-YVELINES		www.uvsq.fr	TA	Sylvie FAUCHEUX sylvie.faucheux@uvsq.fr +33 1 39 25 78 03	X	X	X	X
231	UNIVERSITE DU HAVRE		www.univ-lehavre.fr	TA	Camille GALAP camille.galap@univ-lehavre.fr	X	X	X	X
232	UNIVERSITE DU HAVRE - LOMC	Laboratory of Mechanics, Physics and Acoustics. Expertise in Composites	www.univ-lehavre.fr/recherche/lomc	R	Innocent MUTABAZI innocent.mutabazi@univ-lehavre.fr	X			
233	UTAC	Technical Union for the Automobile, Motorcycle and Cycle Industries. UTAC specialises in vehicle and equipment testing. It offers services ranging from product development support for motor vehicle manufacturers through to approval testing in compliance with the different regulations	www.utac.com	ME	Laurent BENOIT laurent.benoit@utac.com +33 1 69 80 40 62	X			X

	Player	Short Description	Website	Stakeholder type	Contact person	Gr	NBM	C	S
234	UVSQ - ILV	Institut Lavoisier: Laboratory in Chemistry and Materials	www.ilv.uvsq.fr	R	Arnaud ETCHEBERRY etcheberry@chimie.uvsq.fr	X			
235	UVSQ - ISTY	French public engineering school specialized in the field of computer science and mechatronics	www.isty-info.uvsq.fr	TA	Pierre BLAZEVIC blazevic@isty.uvsq.fr +3301 39 25 45 88	X		X	
236	UVSQ - LISV	Versailles Laboratory of Engineering and Systems	www.lisv.uvsq.fr	R	Yasser ALAYLI yasser.alayli@physique.uvsq.fr			X	
237	UVSQ - PRISM	Parallelism, Networks, Information Systems, Modelling Laboratory	www.prism.uvsq.fr	R	Samir TOHME samir.tohme@prism.uvsq.fr			X	
238	VALEO	Valeo is dedicated to the design, the manufacture and the sale of components, integrated systems and modules for cars and heavy lorries	www.valeo.com	LE	Guillaume DEVAUCHELLE guillaume.devauchelle@valeo.com +33 1 40 55 21 28	X		X	X
239	VALEO - Comfort and Driving Assistance Systems	The Comfort and Driving Assistance Systems Business Group comprises four Product Groups: Driving Assistance, Interior Controls, Interior Electronics, and Access Mechanisms	-	LE				X	X
240	VALEO - Powertrain Systems	The Powertrain Systems Business Group comprises five Product Groups: Electrical Systems, Transmission Systems, Engine Management Systems, Air Management Systems, and Hybrid and Electric Vehicle Systems	-	LE		X			
241	VALEO - Thermal Systems	The Thermal Systems Business Group comprises four Product Groups: Climate Control, Powertrain Thermal Systems, Compressors, and Front-End Modules	-	LE		X			
242	VALEO - Visibility Systems	The Visibility Systems Business Group comprises three Product Groups: Lighting Systems, Wiper Systems, and Wiper Motors	-	LE					X
243	VeDeCoM Insitute	Institute for the new durable individual mobility sector, with its two applicative sectors: the vehicles themselves, both carbon-free and communicative, and the eco-system for the carbon-free mobility which these new vehicles will create	www.fondation-moveotec.com	R	Jérôme PERRIN jerome.perrin@moveotec.com	X	X	X	

	Player	Short Description	Website	Stakeholder type	Contact person	Gr	NBM	C	S
244	VENTURI FRANCE	Automotive manufacturer of electric cars and electric drivetrains	www.venturi.fr	SE	Marianne HOLLANDE mhollande@venturi.fr	X			
245	VEOLIA TRANSPORT	Leader in public transportation. Veolia operates and manages public transportation systems worldwide	www.veolia-transport.com	LE	Philippe PAYEN philippe.payen@veolia.com +33 1 71 75 13 19		X		
246	VIMADES	VIMADES promotes innovations of mathematical viability theory for design management or feedback rules regulating the evolution governed by a controlled system under viability (state) constraints	www.vimades.com	SE	Jean-Pierre AUBIN aubin.jp@gmail.com +33 1 46 33 71 21	X	X	X	X
247	WATT CONSULTING	Expert Power Electronics Consultants	www.watt-consulting.fr	SE	Benoit SCHMITT benoit.schmitt@watt-consulting.fr +33 1 41 13 15 57	X			
248	WEBDYN	Webdyn designs hardware and software solutions for Machine-to-Machine (M2M) communication	www.webdyn.com	SE	Philippe FAUGERAS philippe.faugeras@webdyn.com +33 1 39 04 29 42			X	

A.3. Regensburg Cluster

Table A.c: Stakeholder list: Regensburg

	Player	Short Description	Website	Table A - Stakeholder type	Contact person	GREEN	NEW BUSINESS MODELS & MOBILITY SERVICES	CONNECTIVITY	SAFETY
1	Achter Elektronik AG	Achter Elektronik AG develops and sells electronic modules and wiring-technology. Achter offers the whole production – from development and production of PCBs to integration of the final products in control cabinets. A core competence of Achter is the development of frequency inverters and power-supplies for high power, which are used in charging infrastructure for e-mobility. Achter has developed a modular charging system for e-vehicles and e-bikes.	http://www.achter-ag.de	SE	Achter, Franz (Vorstandsvorsitzender); eMail: f.achter@achter-ag.de; Tel.Nr.: 08543/6246031	X		X	
2	Avago Technologies GmbH	Avago is designer, developer and global supplier of analog, mixed-signal and optoelectronic semiconductor devices. The portfolio includes products for wireless communication, wired infrastructure, industrial and automotive electronics, and consumer and computing peripherals.	http://www.avagotech.de	LE	Weigert, Martin; eMail: martin.weigert@avagotech.com; Tel.Nr.: 0941/29784121	X			

	Player	Short Description	Website	Stakeholder type	Contact person	Gr	NBM	C	S
3	AVL List GmbH	AVL is the world's largest privately owned and independent company for the development of powertrain systems with internal combustion engines as well as instrumentation and test systems. In the scope of business powertrain, AVL develops and improves all kinds of powertrain systems and is a competent partner to the engine and automotive industry. AVL Software and Functions GmbH, Regensburg develops environmentally friendly E-Mobility solutions in the areas of Battery Management, E-Motor Management, and Vehicle Control Systems. With innovative solutions, AVL supports its customers in the development of individually optimized E-vehicles. Especially system efficiency as well as safety aspects are in the focus. Therefore, AVL is the leading partner for the development of sustainable E-mobility applications of cars, trucks, busses or agricultural equipment.	https://www.avl.com	LE	Angermaier, Anton (Leiter Segment E-Mobility); eMail: anton.angermaier@avl.com; Tel.Nr.: 0941/63089103	X		X	

	Player	Short Description	Website	Stakeholder type	Contact person	Gr	NBM	C	S
4	Bertrandt AG	The Bertrandt Group has been providing development solutions for the international automotive and aviation industries in Europe and the USA for more than 35 years. A total of about 9,000 employees at 39 locations guarantee extensive know-how, sustainable project solutions and a high level of customer orientation. Its main customers include the major manufacturers and numerous system suppliers.	http://www.bertrandt.com	LE	Iamandi, Heiko; eMail: heiko.iamandi@de.bertrandt.com; Tel.Nr.: 089/3160897412	X			
5	Conrad Electronic SE	Conrad Electronic SE is an electronic retailer with three distribution channels. The unique advantage that Conrad offers, is the broad distribution in three ways: All products and services are provided via catalog, stores and the Internet. The customer has the freedom to choose, which way is most convenient for him. The 220 000 strong product range also includes e-mobility: pedelecs, e-scooters and e-bikes - and the power supply is provided by solar and wind energy systems.	http://www.conrad.de	LE	iLEM: Seyferth, Dominik; eMail: dominik.seyferth@conrad.de; Tel.Nr.: 09622/305038	X	X	X	X

	Player	Short Description	Website	Stakeholder type	Contact person	Gr	NBM	C	S
6	Continental Automotive GmbH	The Automotive Group of Continental is one of the worldwide leading automotive suppliers. The Automotive Group develops and manufactures innovative products and systems. For the electric mobility Continental is offering a comprehensive portfolio, which extends from special electric vehicle tires, over the complete electric drive, up to electronic systems like Smart Charging. With the help of clever electronics and networked communication Smart Charging increases the range of electric vehicles and makes recharging efficient and comfortable for the driver. The Continental Automotive GmbH has already carried out same projects in the fields of development of battery electronics, telematics, charging and power electronics and has also cooperated in different funded projects. In Regensburg, more than 6.000 qualified employees produce high-tech components for the automotive industry.	http://www.conti-online.com/generator/www/de/de/continental/automotive/general/home/index_de	LE	Böld, Martin Hofmann, Karsten (Director Advanced Development and Innovation Coordination); eMail: karsten.hofmann@continental-corporation.com; Tel.Nr.:	X		X	

	Player	Short Description	Website	Stakeholder type	Contact person	Gr	NBM	C	S
7	E-Motiontech GmbH	E-Motiontech Gmbh is a service provider in the automotive business. Competences are: electric drivetrain for electric vehicles (key competence: Electric wheel hub motors), safety analysis and concepts according to ISO 26262 and IEC 61508, model based development (EA), E/E-architecture, AUTOSAR, functional safety for automotive (HA&RA, FMEA, FTA …) and automotive Solid State Lighting LED module design.	http://www.e-motiontech.de	SE	Virnich, Ulrich (Geschäftsführer); eMail: ulrich.virnich@e-motiontech.de; Tel.Nr.: 0941/99251982	X			
8	EBSnet / eEnergy Software GmbH	EBSnet is a small independent software enterprise and specialist for practical solutions with high performance in the energy branch. Core competence is the technological realization of the strict unbundling-requirements of the Bundesnetzagentur for electricity and gas (GPKE, GABi Gas, GeLi Gas, MaBiS, WiM). Their system solution myXSolution supports the exchange of energy-data between all market participants for the areas grid and sales. Using modern business intelligence their portfolio comprises the areas market communication, process-data-management and analysis and visualisation of energy data. Further applications are smart metering and e-mobility.	http://www.ebsnet.de	SE	Boeddecker, Martin; eMail: martin.boeddecker@ebsnet.de; Tel.Nr.: 0941/94260200	X	X	X	X
9	ESG Elektroniksystem- und Logistik GmbH	ESG is a worldwide service engineer for development, integration and operation of complex electronic- and IT systems. Since nearly 50 years ESG is partner in consulting, system development, logistics, training, technical services and IT-services. Customers are in automotive-, aeronautics- and space-industry and also telecommunication and investment goods industry in general. ESG also supports military institutions and ministries in Germany and worldwide.	http://www.esg.de	ME		X	X	X	X

	Player	Short Description	Website	Stakeholder type	Contact person	Gr	NBM	C	S
10	evopro systems engineering AG	The evopro systems engineering AG is a hardware-independent engineering provider. evopro offers hardware development in design areas analog, mixed-signal, high-speed-digital, FPGA and power circuits. In addition evopro offers software-development for single user solutions as well as networked multiuser-applications, evaluation of functionality and adaption of software solutions to new requirements. In the field of e-mobility evopro has its competences in concept, circuit design and layout for the hardware of charging stations and in concept and safety review of software solutions for controlling charging stations. In the field of data transmission to and inside the vehicle evopro covers protocol, physical layer and safety	http://www.evopro-ag.de	ME	iLEM: Weingarten, Johannes; eMail: johannes.weingarten@evopro-ag.de; Tel.Nr.: 0941/89964530	X		X	

	Player	Short Description	Website	Stakeholder type	Contact person	Gr	NBM	C	S
11	FROSYS GmbH	FROSYS is part of FG.de, a group of companies specialized on green energy. FROSYS is a perfect partner for solutions in the fields of e-mobility, intelligent consumption measurement, energy management and power distribution (Smart Metering / Smart Grid). In the future market of e-mobility, FROSYS is a system supplier of software and hardware components for infrastructure solutions. The company positions itself as a system integrator for intermodal charging stations of different manufacturers.	http://www.frosys.com	SE	Fröschl, Andreas (Projektmanagement E-Mobility); eMail: a.froeschl@fg.de; Tel.Nr.: 0941/2000090 und 0151/25204677	X		X	
12	HELLA KGaA Hueck & Co.	HELLA is an independent company and global player with more than 100 years of history. Hella develops and produces lighting and electronic products for the automotive business and has one of the biggest retail-organization for vehicle parts and accessories.	http://www.hella.com	LE	Kinalzyk, Dietmar (FuSi Manager); eMail: dietmar.kinalzyk@hella.com; Tel.Nr.: 0941/59938264	X		X	

	Player	Short Description	Website	Stakeholder type	Contact person	Gr	NBM	C	S
13	i-NOVATiON GmbH	i-NOVATION GmbH is a SME specialized in consulting, conception and realization of mobile and web applications. The main topic is the integration of smartphone-, tablet- and web applications in enterprise- and business processes. Customized solutions, starting with iPhone-, iPad- and android applications to backend-solutions, are the field of work of the software and usability experts of i-NOVATION GmbH. HTML5/Web-Frameworks, Java, Objective C, QT and C# in combination with Oracle or MySQL data bases are used in the projects. Essential for future traffic conceptions: simple access to intelligent linked information. Within the frame of the mobile- and web-based development, i-NOVATION GmbH has a far-ranging knowledge and the competences to offer and develop innovative and user-friendly applications.	http://www.i-novation.de	SE	Meierhöfer. Markus (iLEM), eMail: mm@i-novation.de; Tel.Nr.: 0961/6319470	X	X		
14	ILIOTEC Solar GmbH	ILIOTEC Solar GmbH was the first TÜV-certified company in Bavaria in the field of grid-tied solar inverter. Iliotec started as a solar pioneer and has up to now more than 20 years of professional know-how, 300 employees, 15.000 satisfied customers and subsidiaries in Regensburg, Augsburg, Passau, Weiden, Nürnberg and Schweinfurt. ILIOTEC does research on innovative and cost-efficient solutions for the utilization of photovoltaic energy. The ILIOTEC-SunCarport is a result of the research. This economic protection against weather and environment is able to produce electricity by photovoltaic, which can be used to charge an electric vehicle	http://www.iliotec.de	ME	Stefan Dobler (Geschäftsführer); eMail: dobler@iliotec.de; 0941/29770-0	X	X		

	Player	Short Description	Website	Stakeholder type	Contact person	Gr	NBM	C	S
15	Infineon Technologies AG	Infineon Technologies focuses on the three central challenges facing modern society: Energy Efficiency, Mobility and Security and offers semiconductors and system solutions for automotive and industrial electronics and chip card and security applications. Suitable for all electric drivetrain architectures the product portfolio comprises discrete components, power semiconductors, microcontrollers, sensors as well as high power modules. Infineon is the world's leading supplier of Smart Grid semiconductor solutions: Smart energy supply for eCars as well.	http://www.infineon.com	LE	Tutsch, Günter (Leiter Fertigung); eMail: guenter.tutsch@infineon.com; Tel.Nr.:	X			
16	InitPRO GmbH	initPRO GmbH offers solutions for intelligent data-evaluation for enterprises, for RFID-systems and SRM – Service & Repair Management. Repairline is a Service & Repair Management Tool, which reduces the repair-efforts for manufacturers, service partners and customers. It allows data acquisition in coded format to be used by expert systems. initPRO offers After-Sales-Solutions for charging infrastructure to optimize the manufacturer – sales – customer – service chain and to facilitate error management in the phases fault recognition and diagnosis for novel and complex charging systems.	http://www.initpro.de	SE	Ralf Halbritter; iLEM: Jungbauer, Norbert; eMail: norbert.jungbauer@initpro.de; Tel.Nr.: 0941/604889851	X	X		

	Player	Short Description	Website	Stakeholder type	Contact person	Gr	NBM	C	S
17	INSYS MICROELECTRONICS GmbH	INSYS MICROELECTRONICS GmbH is, especially with the brand INSYS icom, a specialist in the field of industrial data communication and M2M-solutions. The product portfolio ranges from serial modems to integrated mobile service routers and intelligent control-components. Products are used e.g. in home-surveillance systems, energy management and charging infrastructure for e-mobility. In addition INSYS MICROELECTRONICS offers its development competences for special solutions, always considering the newest intenational standards	http://www.insys-tec.de	SE	Wels, Anna (Senior Executive President); eMail: awels@insys-tec.de; Tel.Nr.: 0941/5869238; Heider, Markus (Entwicklungsleitung Kommunikationstechnik): eMail: mheider@insys-tec.de; Tel.Nr.: 0941/560061	X		X	

	Player	Short Description	Website	Stakeholder type	Contact person	Gr	NBM	C	S
18	iNTENCE automotive electronics GmbH	The iNTENCE automotive electronics GmbH is a team of experts in the development of embedded systems. Core competences are car body electronics, convenience electronics, infotainment and e-mobility. Customers are u.a. OEM (e.g. AUDI) and Tier-1 suppliers (Continental and Hella).In the field of e-mobility the team is specialized in data transfer inside the vehicle and the development of battery controls electronics. The company sets a high value on software quality and development excellence in customized solutions.	http://www.intence.de	SE	Schmidt, Peter (siehe Kommentar) Wagner, Rigobert; eMail: r.wagner@intence.de; Tel.Nr.:	X		X	

	Player	Short Description	Website	Stakeholder type	Contact person	Gr	NBM	C	S
19	iS-Software und Beratung GmbH & Co. KG	iS Software is an established supplier of software solutions to the Energy & Utilities industry, with years of experience.	http://www.is-soft.com	SE	Weininger, Johann (Geschäftsführer); eMail: johann.weininger@is-software.com; Tel.Nr.: 0941/464520	X			
20	ISOVOLTA Gatex GmbH	Isovolta Gatex is specializing in thermosetting materials and machines them according to individual specifications. In accordance with its specific purpose, ISOVOLTA develops optimum processes for each product. Competences are in material-specific selection and manufacturing technology. The main application field is the electrical industry. There, the materials are applied in regenerative power generation in the fields of photovoltaics and wind turbines, in energy distribution of transformers and heavy machinery and in the chemical storage technology.	http://www.isovolta.de	ME	Silberhorn, Stefan (Umfrage) Kellner, Katrin (assistent to director sales & marketing); eMail: katrin.keller@isovolta.de; Tel.Nr.: 09431/635111	X			

	Player	Short Description	Website	Stakeholder type	Contact person	Gr	NBM	C	S
21	Kontron AG	As a vendor of embedded, standards-based commercial off the shelf (COTS) and custom solutions Kontron offers transportation OEMs worldwide presence and experience. Each global and local application in rail, road, air and shipping traffic demands specific computing technology, answered effectively with Kontron's wide product portfolio and extensive application experience in these transportation segments. Kontron's in-depth knowledge of local and international standards and requirements simplifies application development by ensuring validated solutions. Developing, engineering, certifying and manufacturing through a single source guarantee the highest quality and ensure that standards such as ISO9001, EN50155, SIL4, etc. are adhered to strictly. Regular audit checks constantly secure the quality of all parts	http://de.kontron.com	LE	Hafner, Hubert (Product Marketing Manager); eMail: hubert.hafner@kontron.com; Tel.Nr.: 0991/37024479	X			

	Player	Short Description	Website	Stakeholder type	Contact person	Gr	NBM	C	S
22	Maschinenfabrik Reinhausen GmbH	MR is a hidden champion in the field of energy transmission and distribution. MR is a world market leader in tap changers for power transformers. In addition to its core business, the regulation of power transformers, MR deals with construction of high-voltage testing and diagnostic systems, the manufacture of composite insulators, the conceptual design of systems for reactive power compensation and surface modification using atmospheric-pressure plasma technologies. The company, founded in 1901, has expanded continuously worldwide right up to the present day and now employs about 2.700 people. For the success of the energy transition there is a need for a huge development of local generated renewable energy. By the rising number of photovoltaic and biogas plants as well as wind engines the load of distribution networks increases. Critical are especially the voltage range violations, which imperil electric installations and limit the feed in capacities in the grids. An effective and economic alternative to the high priced network expansions are adjustable local network transformers, which are controlled by on-load tap-changers from MR. Since the beginning of the year 2011, network operators use this technology successfully. Nationwide, about a dozen smart transformer are in use, e.g. E.ON Avacon, N-ERGIE or SÜWAG.	http://www.reinhausen.com/de/desktopdefault.aspx/tabid-11	LE	Viereck, Karsten; eMail: k.viereck@reinhausen.com; Tel.Nr.: 0941/40904070	X			
23	Matthias Neder Softwarebüro	Matthias Neder Softwarebüro is a service provider for charging infrastructure and mobile applications.		SE	Neder, Matthias; eMail: info@neder.de; Tel.Nr.: 09407/4920046	X			

	Player	Short Description	Website	Stakeholder type	Contact person	Gr	NBM	C	S
24	MBtech Group GmbH & Co. KGaA	MBtech Group is an engineering and consulting enterprise and is one of the world leaders in developing powertrains from the initial concept to mass production. The services from MBtech cover the complete product life cycle including the development process. The services are offered in four segments: vehicle engineering, powertrain solutions, electronics solutions and consulting. E-mobility is part of the segment electronic solutions. MBtech Group takes a holistic approach when it comes to E/E development for electric vehicles. MBTech has the crucial know-how needed to adapt and integrate the preferred E/E systems and components. In addition to methodological proficiency (processes and tools) MBtech Group is expert in many core fields of electric mobility, e.g. electric motors and gear units, power electronics, development and implementation of software functions and infrastructures (refueling systems, charging stations). MBtech Group was founded as a subsidiary from DaimlerChrysler AG. In 2011 a share of 65% was sold to the French enterprise Akka Technologies.	http://www.mbtech-group.com	LE	Hohengarten, Kai; eMail: kai.hohengarten@mbtech-group.com; Tel.Nr.:	X		X	

	Player	Short Description	Website	Stakeholder type	Contact person	Gr	NBM	C	S
25	NEXOE APPLICATIONS GmbH	NEXOE is a software company offering process supporting software, hardware based specialized software and consulting. These include database-based products and solutions for the optimization of engineering processes (eg BOM optimization, CAD / CAE automation), as well as customized software solutions for material selection. We also help our customers continuously supported in the implementation and maintenance of databases for your technical and technological business processes. NEXOE APPLICATIONS GmbH preferably manufactures applications in the field of power engineering. These are firmware solutions for measurement, control and regulation systems (MSR) and safety technology	www.nexoe.de	SE	Walter, Jens; eMail: info@nexoe.de; Tel.Nr.: 0941/604889470	X		X	
26	Osram Opto Semiconductors GmbH	OSRAM Opto Semiconductors is one of the world's leading manufacturers of optoelectronic semiconductors and is considered an authority on innovative light technologies. Because the company for decades has been investing in technology and quality, steadily expanding its competencies and resources, it today sets the highest international standards in the fields of illumination, visualization and sensory technology. Its products range from high-performance light-emitting diodes (LED) and infrared diodes (IRED) to semiconductors and detectors.	http://www.osram-os.com	LE	Wimmer, Bernhard (Technical Customer Support); eMail: bernhard.wimmer@osram-os.com; Tel.Nr.: 0941/8502045	X			
27	OSTWIND Verwaltungs GmbH	OSTWIND has evolved from a pioneer of wind power to become an international player in the growth sector of "renewable energies". With offices in Germany, France and the Czech Republic as well as in other selected countries, the medium-sized family company sets the highest standards right across Europe when it comes to wind power.	http://www.ostwind.de	SE	Purschke, Andreas; eMail: purschke@ostwind.de; Tel.Nr.:0941/5958944	X			

	Player	Short Description	Website	Stakeholder type	Contact person	Gr	NBM	C	S
28	PG Trade & Sales GmbH	The PG brand stands for lifestyle, excellence and sustainability. Under these values, the company, which started out as a premium manufacturer for innovative and exclusive e-Bikes, Pedelecs and Urban-Bikes goes to the very edges of the luxury market. In the foreground of all innovative developments of PG stands e-mobility. The latest coup is the sports car PG-Elektrus, designed by Michael Fröhlich, as an urban combination of sustainability, lifestyle and design.	http://www.pg-bikes.com	SE	Ostner, Manuel (Geschäftsführer); eMail: info@pg.de; Tel.Nr.:	X			
29	REWAG Regensburger Energie- und Wasserversorgungs AG & Co KG	The REWAG stands for convenient and reliable energy and drinking water supply in the region Regensburg for over 35 years. The regional energy supplier REWAG supports the extension of the charging infrastructure in cooperation with enterprises of the region – mostly in the fields of purchase of charging stations and the availability of vehicles (act as a consultant). In this connection REWAG sees great possibilities in the development of the smart grids and the smart metering technologies, which allow a more efficient, failure-free and constant feeding of local generated renewable energy. The company employs about 380 people.	http://www.rewag.de	ME	Thomas, Clemens (Grundsatzplanung); eMail: clemens.thomas@rewag-netz.de Tel.Nr.: 0941/6013460; Breidenbach, Norbert (Vorstandsvorsitzender der REWAG KG); eMail: norbert.breidenbach@rewag.de; Tel.Nr.: 0941/6012000	X			

	Player	Short Description	Website	Stakeholder type	Contact person	Gr	NBM	C	S
30	ROHDE & SCHWARZ GmbH & Co. KG	Rhode & Schwarz is a family owned enterprise with more than 8000 employees thereof more than 5000 in Germany. The subsidiary in the Eastern Bavaria - Teisnach is active in charging infrastructure. Their design-awarded charging station E-POWER-STATION permits the users a fast and innovative charging of their vehicles (quick charging-technology of the battery: 80% in only 30 minutes). It is possible at this station, to use up to four charging docking devices simultaneously, which can be configured at own requests. The E-POWER-STATION is designed as a self-contained module or as a wall-box, which can also be equipped with an integrated house junction box. Rhode & Schwarz also offers all established kinds of identification and billing systems, e.g. RFID.	http://www.rohde-schwarz.de	LE	Frieb-Preis, Thorsten (Leiter Vertrieb): Tel.Nr.: 09923/8571704; eMail: thorsten.frieb-preis@rohde-schwarz.com	X		X	

	Player	Short Description	Website	Stakeholder type	Contact person	Gr	NBM	C	S
31	Schneider Electric Sachsenwerk GmbH	SCHNEIDER ELECTRIC, The Global Specialist in Energy Management™, is a worldwide acting expert in the field of energy management and automation, aiming at optimization of availability of energy without disregarding the efficiency and environmental compatibility. An integrative component is the infrastructure for e-mobility (as a zero-emission alternative for mobility). Scopes of action are charging infrastructure, energy management and tools for visualization. In the year 1990, the company decided to set up a new location in Regensburg and now employs about 850 people.	http://www.schneider-electric.com	LE	Haim, Mario (ab 01.07.2012); mario.haim@schneider-electric.com; Dr. Uwe Kaltenborn (bis 30.06.2012): uwe.kaltenborn@schneider-electric.com;	X		X	

	Player	Short Description	Website	Stakeholder type	Contact person	Gr	NBM	C	S
32	Siemens AG	Siemens AG, a globally active company, offers products and solutions for energy, healthcare, industry and infrastructure. With regard to the size (more than 360.000 employees) and the large variety of divisions, Siemens contributes, within the scope of e-mobility, in charging infrastructure (especially battery- and energy-storage). The head office of this division, by name Automation & Drives, is located in Regensburg and employs 1.600 people (about a quarter of a total of 6.260 employees)	http://www.siemens.com	LE	Niedenzu, Wolfgang; eMail: wolfgang.niedenzu@siemens.com; Tel.Nr.: 0941/7902076	X		X	
33	S-Y Systems Technologies Europe GmbH	The S-Y systems Technologies GmbH offers optimized solutions for electrical and electronic distribution (market leader) and electric vehicle architectures. The company is a joint venture between Continental and Yazaki and benefits from the expertise of two global players.	http://www.sy-systems.eu/	ME	Gröhlich, Klaus (System Engineer); eMail: klaus.groehlich@systech-eu.com; Tel.Nr.: 0941/2985228	X			

	Player	Short Description	Website	Stakeholder type	Contact person	Gr	NBM	C	S
34	Technagon GmbH	Technagon is specialist in privat label design and manufacturing of electromechanic units, mechanic systems and components. With the capabilities in rapid prototyping Technagon provides a full service package to the clients, starting from single units up to serial production. Technagon supports customers starting with the first concept. Within the engineering process, Technagon focusses on the requirements of the clients. Supported by the DIN EN ISO 9001 certified manufacturing partners Technagon is able to realize complex but also simple projects with rapid engineering cycles. Based on extensive knowledge in PCB layout and mechanical construction services, Technagon is specialist but also generalist for a large scale of engineering and manufacturing services.	http://technagon.eu	SE	iLEM: Klässner, Martin; eMail: m.klaessner@technagon.de; Tel.Nr.: 08555/5170006	X		X	

	Player	Short Description	Website	Stakeholder type	Contact person	Gr	NBM	C	S
35	Technisches Büro Thaller	Technisches Büro Thaller is a supplier in charging infrastructur and energy management business.		SE	Thaller, Ernst; eMail:techn.buero.thaller@t-online.de; Tel.Nr.: 0171/3502168	X		X	
36	Tieto Deutschland GmbH	Tieto Deutschland GmbH is part of Tieto the leading IT service company in Northern Europe providing IT and product engineering services. The highly specialized IT solutions and services complemented by a strong technology platform provide our local and global customers tangible business benefits. We are a trusted transformation partner and close enough to understand the individual needs of each and every customer. With about 18 000 experts, we aim to become a leading service integrator creating the best service experience in IT.	http://www.tieto.de	LE	Buchhauser, Markus; eMail: markus.buchhauser@tieto.com; Tel.Nr.: 06196/766027306		X	X	
37	TÜV SÜD AG	The technical services enterprise TÜV SÜD assists the whole value chain of his customers. The core capabilities are consulting, testing, certification and training. Based on the big amount of its employees, more than 16.000, TÜV SÜD AG is the number 1 in the field of its core divisions in Germany.	http://www.tuev-sued.de	LE	Resch, Stefan (Global Product Leader e-mobility Vehicle); eMail: stefan.resch@tuev-sued.de; Tel.Nr.:		X		

	Player	Short Description	Website	Stakeholder type	Contact person	Gr	NBM	C	S
38	Unternehmensberatung Anton Kliegl	Unternehmensberatung Anton Kliegl is a consulting and software enterprise active in energy business.		SE	Kliegl, Anton; eMail: anton.kliegl@t-online.de; Tel.Nr.: 0941/30785788	X			
39	Vector Informatik GmbH	Vector is the leading producer of software tools and software components for the cross linking in electronic systems, based on CAN, LIN, FlexRay, Ethernet and MOST as well as for the manifold CAN-based protocols and is market leader in the field of data transfer inside the vehicle. Vector serves a professional and open platform for the development of cross linked systems in electric vehicles. The tools, software components, control units and services intertwine and boost the projects. Worldwide, more than 1.000 employees are acting.	http://www.vector.com	R	Schiekofer, Peter; eMail: peter.schiekofer@vector.com; Tel.Nr.: 0941/20865101	X		X	

	Player	Short Description	Website	Stakeholder type	Contact person	Gr	NBM	C	S
40	Visu-IT! GmbH	The company Visu-IT!, located in Regensburg (Germany), offers high quality Tools and Services in the automotive area, especially for the ECU function- and software-development. Expert tools and knowledge in the area of measurement, calibration and diagnostic are part of the portfolio.	http://www.visu-it.de	SE	Lohberger, Franz (Geschäftsführer); eMail: franz.lohberger@visu-it.de; Tel.Nr.: 09947/9040004	X		X	
41	ZF Friedrichshafen AG	ZF is a leading worldwide automotive supplier for Driveline and Chassis Technology with 121 production companies in 27 countries. In 2011, the Group achieved a sales figure of EUR 15.5 billion with nearly 71.500 employees. ZF is among the top 10 companies on the ranking list of the largest automotive suppliers worldwide.	http://www.zf.com/corporate/de/homepage/homepage.html	LE	Loibl, Josef (Leiter Entwicklung Transmission Controls); eMail: josef.loibl@zf.com; Tel.Nr.: 0941/78459611	X		X	
42	Technologiecampus Cham (HDU Deggendorf)		http://tc-cham.hdu-deggendorf.de/	R	Prof. Dr.-Ing. Peter Firsching; e-mail: peter.firsching@hdu-deggendorf.de	X			
43	Technologiecampus Freyung (HDU Deggendorf)		http://www.technologiecampus-freyung.de/	R	Prof. Dr.-Ing., Dipl.-Ing. Grzemba, Andreas; e-mail: andreas.grzemba@hdu-deggendorf.de	X		x	
44	Technologiecampus Teisnach (HDU Deggendorf)		http://tc-teisnach.hdu-deggendorf.de/	R	Prof. Dr. rer. nat. Peter Sperber; e-mail: peter.sperber@fh-deggendorf.de	X			
45	IT Anwenderzentrum (RUAS Regensburg)		http://www.it-anwenderzentrum.de/	R	Prof. Dr. M. Kucera; e-mail: itanwenderzentrum@hs-regensburg.de			X	X

	Player	Short Description	Website	Stakeholder type	Contact person	Gr	NBM	C	S
46	LaS³ [Laboratory for Safe and Secure Systems] (RUAS Regensburg)		http://www.las3.de/	R	Prof. Dr. Jürgen Mottok; e-mail: juergen.mottok@e-technik.fh-regensburg.de	X		X	X
47	BiSP Regensburg – Biometrics and Sensor Technology Research Center (RUAS Regensburg)		http://homepages.fh-regensburg.de/~scg39398/biometricsmartpen/	R	Prof. Georg Scharfenberg; e-mail: georg.scharfenberg@e-technik.fh-regensburg.de	X		X	
48	Competence Center Software Engineering [CCSE] (RUAS Regensburg)		http://ccse.fh-regensburg.de/	R	Prof. Dr. Tsakpinis Athanassios; e-mail: info@cc-se.net	X			X
49	Mechatronics Research Unit [MRU] (RUAS Regensburg)		http://www.mechatronik.org/	R	Prof. Dr. Gareth J. Monkman; e-mail: gareth.monkman@e-technik.fh-regensburg.de	X			
50	Sensorik Applikationszentrum [SappZ] (RUAS Regensburg)		http://www.sappz.de/	R	Prof. Dr. rer. nat. Rudolf Bierl, Dipl. Phys.; e-mail: rudolf.bierl@hs-regensburg.de	X			
51	Amt für Wirtschaftsförderung, Regensburg		http://www.regensburg.de/rathaus/aemteruebersicht/wirtschafts-u-finanzreferat/amt-fuer-wirtschaftsfoerderung/6258	Boosting Competitiveness	Lautenschläger, Toni (stv. Amtsleiter): eMail: lautenschlaeger.toni@regensburg.de; Tel.Nr.: 0941/5071851	X	X	X	X

	Player	Short Description	Website	Stakeholder type	Contact person	Gr	NBM	C	S
52	Energieagentur Regensburg e.V.		http://www.energieagentur-regensburg.de	Boosting Competitiveness	Friedl, Ludwig (Geschäftsführer); eMail: friedl@energieagentur-regensburg.de; Tel.Nr.: 0941/29844910	X			
53	F.G.H. Mediawerk GmbH		http://www.modern-mobil.de	Boosting Competitiveness	iLEM: Fink, Johann; eMail: hans.fink@fgh-mediawerk.de; Tel.Nr.: 0941/796070	X	X	X	X
54	IT-Inkubator Ostbayern GmbH "IT-Speicher"		http://www.it-speicher.de/it-speicher	Boosting Competitiveness	Vogler, Herbert (Dr., Geschäftsführer); eMail: herbert.vogler@it-speicher.de; Tel.Nr.: 0941/60488910	X	X	X	X
55	HDU Deggendorf		http://www.hdu-deggendorf.de	Education	e-mail: info@hdu-deggendorf.de	X	X	X	X

	Player	Short Description	Website	Stakeholder type	Contact person	Gr	NBM	C	S
56	RUAS Regensburg		http://www.hs-regensburg.de	Education	e-mail: poststelle@hs-regensburg.de	X	X	X	X
57	Universität Regensburg		http://www.uni-regensburg.de	Education	e-mail: kontakt@uni-regensburg.de	X	X	X	X

A.4. Piedmont region

Table A.d: Stakeholder list: Piedmont

	Player	Short Description	Website	Table A - Stakeholder type	Contact person	GREEN	NEW BUSINESS MODELS & MOBILITY SERVICES	CONNECTIVITY	SAFETY
1	2A S.p.A. Divisione Fonderie, Via Asti 67/b 10026 Santena (TO)	It is a young and innovative die-casting foundry oriented and specialized in the design, development and production of components for the automotive and domotic industries. 2a, within the automotive industry, is mainly specialized in the production of the pieces for the truck engine, working for many major companies in Italy, France, Germany, Sweden and USA. 2a is melting yearly more than 6000 tons of 5 different aluminium alloys in order to fulfill the request of its customer.	www.fonderie2a.com	ME	Nicola Basile 390.119.496.109 393.284.335.480 nicola.basile@2aspa.com	X			

	Player	Short Description	Website	Stakeholder type	Contact person	Gr	NBM	C	S
2	4S s.r.l.	4S S.r.l. is a young company, founded by experts who were formerly senior managers of technical and organizational areas in automotive industries. 4S srl makes use of a team of specialists with excellent professionalism and experience. The competences of 4S srl range from specialized technical areas especially in the field of automotive electronics including electric-electronic architectures, functional safety, alternative propulsion systems, to more general organizational and company process oriented areas such as company management systems, company process development and specific methodologies to support product development and production process optimization.4S srl cooperates with a network of complementary external enterprises to offer a wide range of qualified services and innovative products. The services are aimed to support companies for the development of safe, robust and reliable products. The products offered by 4S srl are customised software tools, to complement consultancy services in the field of Product Development and Product Reliability, and customised test equipment especially devoted to the functional safety validation of electric-electronic vehicle systems.	www.4sgroup.eu	SE	Renato Librino +39 335 7234666 renato.librino@4sgroup.it Carlo La Torre +39 334 1164825 carlo.latorre@4sgroup.it	X			X

	Player	Short Description	Website	Stakeholder type	Contact person	Gr	NBM	C	S
3	ACEA Pinerolese Industriale SpA	ACEA Pinerolese Industriale S.p.A. is a modern Italian multi-utility company, which currently provides services for Municipalities, private companies and citizens. In more than 150 years (ACEA finds his origin in 1856, when the first Italian-French society for gas supplying was established) the company has continued its territorial growth and the current Group, established in 2003, operates in 47 Municipalities situated in the North West of Italy and serves a user base of over 150.000 inhabitants. In the environment sector, ACEA manages the entire waste cycle from waste collection to the development and administration of different waste treatment plants (including an ISO 14001 certified landfill and an ISO 14001 and 9001 composting plant). The integrated urban wastes treatment plant (IUWT) of ACEA Pinerolese Industriale SpA. currently accepts organic waste from a third of the population of the Turin area, roughly 800.000 inhabitants, providing an acceptable and innovative answer to the increasing demand of the territory.The plant contains four sections: two for the treatment of solid wastes by anaerobic and aerobic digestion, the third one for treating wastewaters and the last one being a landfill area equipped for biogas collection.These four sections are interconnected to maximize biogas and compost yields from bio-waste, thus minimizing bio-refuse disposal to landfill. In essence, the bio-organic (humid) fraction of solid urban (FORSU) waste entering the anaerobic process is fermented to yield biogas and a solid digestate (FORSUD) containing residual organic matter not converted to biogas. Electrical power for 3 total MWe is obtained through 3 heat engines fed with the biogas, previously chilled to condense undesired components. The produced electrical power supplies the plants needs and the exceeding energy is sold to the electrical network. The plant guarantees also 6 MW thermal power enough for internal use and, since 2008, for part of the heating requirements of the nearby Pinerolo town residential and commercial heating districts.	ambiente.aceapinerolese.it	LE	Davide Mainero Davide.mainero@aceapinerolese.it +390121236405	X			

	Player	Short Description	Website	Stakeholder type	Contact person	Gr	NBM	C	S
4	Akhela	ICT Company active developing solutions, product and services mainly in Embedded (Automotive), Banking, Industrial (Energy) and Security Markets.	www.akhela.com	LE	Fabrizio Airoldi			X	
5	AMET S.r.l.	Integrated engineering for the design and testing of mechanic and mechatronics products and processes. Core business: transportation industry, in particular automotive. Main services/products: - CAE, i.e. numerical simulation using FEM (crash, NVH, CFD) and multibody; - real-time control systems and networking for embedded applications; -physical bench testing	www.amet.it	SE	Andrea ARGONDIZZA e-mail: andre-a.argondizza@amet.it telephone: +390119007807 mobile: +39 3482290601 fax +390119007749	X			
6	AXIS srl	AXIS S.r.l. is a company established in 1990. The main activity is the design and production of AVL (Automatic Vehicle Localization) modules characterized by different complexity, cost and IP protection, designed to satisfy fleets management requirements for public or private vehicles. High level devices are provided of Computer on Module processor based on OS Windows Embedded Standard / CE, and Linux compliant	www.axisautomazione.it	ME	Luca Toscana Email: l.toscana@axisautomazione.it tel.: +39 011.2303652			X	
7	BE2HUB SRL	Combined expertise in the fields of renewable energy technologies, domotics, mechatronics and electronics. Energy efficiency, offering smart metering systems. Integration and development of Lithium Ion Battery Packs for Energy Storage Systems and for Automotive related applications	www.be2hub.com	SE	Renzo Eternocell. +393480032880, email: renzo.eterno@be2hub.com	X			

	Player	Short Description	Website	Stakeholder type	Contact person	Gr	NBM	C	S
8	Bertone	Founded in 1912, Bertone is one of the earliest and most prestigious car companies, always keeping step with formal and technological evolution. The major and most celebrated world manufacturers entrusts Bertone with the task of realizing car models that are able to impose themselves as cornerstones in Car Design such as Alfa Romeo Giulietta Sprint, Lamborghini Miura, Lancia Stratos HF, Lamborghini Countach, Volvo 780 Coupé,Alfa GT, Fiat Panda. Bertone is today a high technology service company (complete manufacturing-cycle) in the automotive sector, as well as in transportation and engineering fields. Bertone services are Design (Automotive design, Transportation design, Industrial design, Concept design); Engineering (Product Engineering, Process Engineering, Advanced Engineering); Prototyping (Show Cars, One-off Cars); ICT (Information & Communication Technologies).	www.bertone.it	LE	Mr Sandro Colella - Managing Director . Mail to: sandro.colella@bertone.it Phone: +39.011.9638322	X	X	X	
9	Bluethink S.p.A.	Innovation services through technology transfer. Bluethink works according to the Open Innovation model	bluethink.it	SE	Andrea Ranieri 011.19825335 Andrea.ranieri@bluethink.it		X		
10	Brain Technologies Srl	Mechatronics is a science born from the interaction of three disciplines: mechanics, electronics and IT. In order to meet the boost in requests from increasingly demanding clients, the company has developed more and more complex systems by merging the engineers' experiences and competences in an organized and integrated design process. Some of the targets within reach of the mechatronic systems comprise: increase in performance and safety, reduction in pollution, improvement in comfort, rationalization of costs. brain Technologies is a safe and constant point of reference throughout all phases of the development of a process.	www.brain-tech.it	SE	Michela Avalle, +393471567156 michela.avalle@brain-tech.it	X		X	

	Player	Short Description	Website	Stakeholder type	Contact person	Gr	NBM	C	S
11	Bylogix s.r.l.	Bylogix S.r.l. is an engineering company, made up of professional engineers from different sectors who have worked both in research and in industry. Our core business is divided in 5 main streams: -the development of software applications for embedded systems - Automotive architectures definition - safety analysis (ISO 26262, EN 61508) - test equipment for R&D labs - monitoring systems for infrastructures	www.bylogix.it	ME	Francesco Ricciardi francesco.ricciardi@bylogix.it +39 3387898065	X			X
12	C.M.S. s.a.s. di Tutolo Mauro & C.	An Italian company with 40 years of experience in the field of precision mechanics. Production ranges from mechanical parts machining, individuals or small series, until the construction of qualified mounting groups including; copying jobbing special moulds to the realization of full mold. The works are performed on machines 3 and 5 axis NC and with the help of CAD/CAM system	www.cmstorino.it	SE	Mauro Tutolo amministrazione@cmstorino.it	X			
13	Capetti elettronica srl	Italian private company (UNI EN ISO 9001 certified since 2007 by DNV) founded in 1973, operates as designer and manufacturer in the electronic industry. At present 30 people are employed in the 2000m2 factory. The R&D department designs electronic equipment according to the international customers' requirements while the manufacturing department assembles, test and packs the equipment. The whole production cycle (from the design to the product) is managed by the company.	www.capetti.it	SE	Maurizio Bertero Maurizio.bertero@capetti.it 3901198198229	X		X	
14	Cellino s.r.l.	Manufacturing sheet metal parts: R&D - Design Tools - Construction dies, fixtures, gauge - Stamping, Welding, Assembling. Divisions: Truck, Automotive - Earth Moving & Agriculture - Light Fabrication	www.cellino-group.it	LE	Osvaldo Paolo Tappero osvaldo.tappero@cellino-group.it +39 329 5956311	X			

	Player	Short Description	Website	Stakeholder type	Contact person	Gr	NBM	C	S
15	Centro Ricerche Fiat S.C.p.A.	The CRF research activities imply strategic competences not only in the field of automotive engineering, but also in the fields of manufacturing, advanced materials, ICT and electronics, as well as a wide range of state-of-the-art laboratories and extensive test facilities, including EMC chambers and a dynamic driving simulator with immersive virtual reality.CRF participates with a leading role in the European "Green Car Initiative" and "Factories of the Future", the Public Private Partnerships conceived by the European Commission in 2009 to focus public and private research on issues of direct and significant relevance to the Europe with regard to the competitiveness of industry and employment. Within this context, CRF is also actively involved in several key European Technology Platforms including: ERTRAC (road transport), EPOSS (smart systems), EUMAT (materials), MANUFU-TURE (manufacturing), each of which has proved to be particularly effective at bringing together key stakeholders within an Integrated Approach to research and innovation.By December 2011, the Intellectual Property developed by CRF included a total of 2860 patents both granted and pending. Centro Ricerche Fiat (CRF) has maintained its position within Fiat S.p.A. throughout the recent divestures of the Fiat Group. To ensure the continuity of the service provided to Fiat Industrial, specific contracts were signed with Iveco and CNH for research and development activities. In this vein, CRF also forged an alliance with Chrysler whereby the two companies share strategies and processes in order to build a common approach and mode of leading to the definition of a common innovation plan for 2012.	www.crf.it	LE	Andrea Gerini andrea.gerini@crf.it Tel. 011 9083200 Mob. 335 1319763 Franco Ansioso franco.anzioso@crf.it Tel.011 90 83 166	X		X	X

	Player	Short Description	Website	Stakeholder type	Contact person	Gr	NBM	C	S
16	Chemtex Italia SpA (M&G Group)	Gruppo Mossi & Ghisolfi (M&G) is a family owned multinational Group founded in 1953, headquartered in Italy (Milan, Tortona), whose traditional field of interest is polyester business. The group is currently the world leader producer of PET with facilities in Italy, US, Mexico and Brazil. The privately-held company's annual turnover is approximately $ 3.5 billion and employs more or less 2,600. In the last three years M&G has supported its industrial production with an overall investment of $600 million in R&D, new production equipment and technology. M&G Group, from 2009 through its R&D Center Chemtex Italia, has demonstrated the technological and environmental sustainability of second generation bioethanol production from lignocellulosic feedstock (PROESATM technology).	www.chemtex.com www.gruppomg.com	LE	Dr.ssa Alessandra Frattini alessandra.frattini@gruppomg.com Phone - +39 0131 882839	X			
17	CNR-Ceris	Ceris, Istituto di Ricerca sull'Impresa e lo Sviluppo (Institute for Economic Research on Firms and Growth) is the main centre of CNR (National Research Council) which specialises in applied industrial and managerial economics. Ceris was established in 1964 as a spin-off of the former Centro di Ricerca e Documentazione per l'Industria (Centre for Research and Documentation on Industry), founded in 1956 by Professor F.M. Pacces. It can now boast considerable experience in economic research on company behaviour and industry structure as well as connections with issues of industrial policy. Its research staff has long standing relationships with Universities, Ministries, Governmental Institutions, Authorities and private research centres. Ceris is directed by Secondo Rolfo, and its external referee within the CNR is the Scientific Committee for Economics, Statistics and Sociology.	www.ceris.cnr.it	R	Giuseppe Calabrese, +390116824920g.calabrese@ceris.cnr.it				

	Player	Short Description	Website	Stakeholder type	Contact person	Gr	NBM	C	S
18	Concept Reply, BU of Santer Reply	Advanced design, prototyping , development and end-t-end testing of embedded automotive devices, hardware and firmware, mobile and enterprise-grade software applications and services for automotive, telematics and infotainement.	www.reply.eu	LE	Maurizio Griva	X	X	X	
19	Consoft Sistemi S.p.A.	Consoft Sistemi SPA (CONSOFT), is an ICT industry operating since 1986 with offices in Torino, Milano, Roma and Genova. In recent years, CONSOFT has begun a growth curve starting with a turnover of about 5 million Euros in 1999 which exceeded 20 million in 2010. Consoft Sistemi, since 1986, has focused its business activity on 5 main areas in which it is able to create 'end to end' solutions for its Clients: IT Governance, Business Performance Management, Business Integration, Extended ERP and Telecommunications.	www.gruppoconsoft.it	ME	Christian Salerno christian.salerno@consoft.it Grazia Mangano grazia.mangano@consoft.it	X	X		
20	DAYCO EUROPE S.r.l.	Dayco Europe S.r.l. is a leader on design, development and production of belt system for automotive power transmission, for both timing belt drive (toothed belt) and accessory drive (poly-V belt). Components are "rigid" type like tensioners and idlers, and "flexible" type like belts. To the first category belong also damper pulleys for crankshaft torsional vibration damping, and an actuator for cooling water pump disengage.Every system is developed and optimized following customer' request. At first, a system dynamic simulation is performed; then, for each component design and prototypes are made, for bench or engine functional and durability test.System approach and customer orientation, together with more than ten year of experience, make Dayco one of the leader in belt power transmission system.	http://www.dayco.com	ME	Federico Licata 0125-236348 federico.licata@dayco.com	X			

	Player	Short Description	Website	Stakeholder type	Contact person	Gr	NBM	C	S
21	Denso Thermal Systems SpA	Denso Thermal Systems S.p.A. was established in 1987 as Magneti Marelli Climatizzazione at a time when the Fiat Group and Magneti Marelli decided to enter the growing car air-conditioning industry. In 1990 a joint venture was set up with Denso Corporation (Nippondenso, at the time), world leader in the industry, leading the company into a phase of rapid growth with a build-up in R&D structures, producing technologies and competencies, a stronger presence in European Markets and growth and expansion in activities and production facilities. In 2001 Denso Corporation acquired full ownership of the Company that adopts the name Denso Thermal Systems S.p.A. This allows the company to become part of the Denso Group, world leader in the field of automotive thermal systems. Denso Thermal Systems S.p.A. designs, develops, manufactures and sells air-conditioning and engine cooling systems, heat exchangers (condensers, radiators, evaporators, heater cores, oil cooler) and compressors for cars, commercial and industrial vehicles and also for tractors, earth moving machinery, busses etc. It is also active in designing and assembling integrated cockpit and front-end modules for cars. Products development and R&D activities carried out by Denso Thermal Systems S.p.A. are employing totally 150 resources (Oct. 2012).	www.denso-ts.com	LE	Mr. Domenico Vitali +39 – 011 – 9417667 Domenico.vitali@denso-ts.it	X			
22	Dott. Gallina Srl	Plastic Materials Industry dott. Gallina was founded in 1960 by Pier Aulo Gallina, for the production of plastic trims for automotive industry. Thanks to the development of technologies and markets for thermoplastic materials, the Company widened its range of products to sectors such as industry and construction, where it has reached its current position, enabling it to satisfy the most severe specifications to the highest degree.Due to the high quality of performance and characteristics, such as energy saving, fire ratings, simplicity of installation, and esthetic features, extruded and coextruded thermoplastic materials keep gaining ground in the marketplace	www.gallina.it	SE	Dott. Gallina S.r.l. - Dario Gallina S.r.l - 011/9628177 - info@gallina.it	X			

	Player	Short Description	Website	Stakeholder type	Contact person	Gr	NBM	C	S
23	EFFEGI ELETTRONICA	The company has worked in the field of setup and assemblies of printed circuit boards since 1982.Developed gradually during the years, Effegi stood out in the market thanks to the following factors: - high- technological equipment constantly upgraded, in order to guarantee high quality standards; - usage of corporate know-how to develop new products able to cover different electronic areas,flexibility in production. Effegi Elettronica operates at international level and provides from design to series production of PCBAs.The core business of the company is the engineering and the manufacturing of the electronic process, in different electronic fields such as automotive, consumer, industrial, home automation, aeronautics, marine and civil applications.	www.effegiel.it	SE	MONGE Luca Luca.monge@effegiel.it TAVERNA Gabriele Gabriele.taverna@effegiel.it +39 011 9802365	X			
24	EICAS Automazione S.p.A.	EICAS Automazione S.p.A. is a small-size Italian engineering company located in Torino (Italy), independent of any industrial group. EICAS was established in 1984 by a group of professors of the Politecnico di Torino and industrial researchers led by Francesco Donati with the aim to set up a company excelling in the complex system management and control area. The core of EICAS scientific background concerns dynamic system modeling, simulation and control, signal theory and applied mathematics. The main activity areas are: industrial automation, automatic digital control, innovative application for robotics (also applied to aeronautics sector) and machine tools , software tools for the automatic control design and rapid control prototyping, sophisticated techniques for safety, FDIR and dependability, automotive, space (autonomous attitude determination of spacecrafts from star measurement only) , handling of flexible materials, discrete manufacturing automation.	www.eicas.it	SE	Gabriella Caporaletti Tel. +390115623798 E-mail: g.caporaletti@eicas.it			X	X
25	Elettronica Conduttori srl	Special Electrical Cables Production	www.elettronicaconduttori.com	ME	Mr. Sarcinelli (sales and managing Director)			X	

	Player	Short Description	Website	Stakeholder type	Contact person	Gr	NBM	C	S
26	EMA SRL	EMA assists customers in conception, design and development phases (software/firmware/hardware), components selection, prototyping of electronic and electromechanical units and applications.The high competence of our engineers team, the flexible production and the continuous innovation, have allowed us the creation of additional value to assist our customers in Automotive, Industrial Automation, Domotics, Home Appliances and Railway fields.	www.ema-ic.it	SE	Ing. Alberto Baldi	X	X	X	
27	ENEA	ENEA: Italian National agency for new technologies, Energy and sustainable economic development. ENEA is the name for the Italian National Agency for New Technologies, Energy and Sustainable Economic Development. Pursuant to art. 37 of Law no. 99 of July 23rd, 2009, the Agency's activities are targeted to research, innovation technology and advanced services in the fields of energy - especially nuclear. ENEA performs research activities and provides agency services in support to public administrations, public and private enterprises, and citizens.	-	DA	-	X	X	X	X

	Player	Short Description	Website	Stakeholder type	Contact person	Gr	NBM	C	S
28	Enecom srl	At Enecom Italia we specialize in renewable energies. We have put our passion, devotion and expertise at the service of our customers, with a view to contributing to the betterment of our ecosystem. Enecom's key product is unquestionably its flexible panel. Made from a special plastic material, it uses crystalline silicon technology, whose efficiency is twice as high as that of amorphous silicon. It is very light (2kg/sqm or 0.4 lb/sqin) and thin (1.5 mm / 0.06 inch), shatterproof, waterproof and totally recyclable. The technical features of this product enable Enecom Italia to satisfy a wide range of potential demand, from use on curved surfaces (bus shelters, gazebos, beach umbrellas, or other types of outdoor furniture) to applications requiring strength and flexibility (cars, ships and planes.). Thanks to its lightness, the Enecom panel can be used in many leisure items so as to provide readily available energy.	www.enecomitalia.com	ME	Diego Avesani d.avesani@enecomitalia.com	X			
29	ENGINSOFT	CAE analyses, software development and customization for FEM and CFD, training	www.enginsoft.it	ME	Alfonso Ortalda +393484275093 a.ortalda@enginsoft.it	X			X

	Player	Short Description	Website	Stakeholder type	Contact person	Gr	NBM	C	S
30	Environment Park SpA	Environment Park science and technology parks in Europe operates as a link between the world of research and the industrial system in different sectors: renewable energy, hydrogen, green building and nanotechnology.Environment Park is divided into two business units, which are dedicated to real estate management and to research and innovation. Environment Park has developed a many year experience in the Integrated environmental projects. The park experience has led over time to select four main operational areas: o Green building: dedicated to support the design to private and institutions in the context of green-buildings; o Integrated Environmental Projects: addressed to enterprises and institutions to provide innovative and eco-efficient solutions based on technology transfer, environmental and territorial analysis, innovative environmental management; o Energy: aimed to provide a service to companies and public bodies in the field of energy technologies through research activities for the management of , technological and engineering-innovative solution, technical and economic feasibility studies and product testing. in the Energy sector there are the HySyLab center of excellence and business support on hydrogen technologies and Bioenergy Lab, laboratory research on systems of energy production from biomass; o Plasma: focus on research and technology transfer in the treatment of surfaces with nano-eco-efficient technologies based on plasma.	www.envipark.com	LE	Paola Zitella +39 0112257255 paola.zitella@envipark.com	X			

	Player	Short Description	Website	Stakeholder type	Contact person	Gr	NBM	C	S
31	Etica srl	ETICA was founded in 1993 by a team of software designers with many years of common experience in building important corporate logistic, production planning and control and factory automation industrial IT systems for major manufacturers. ETICA offers solutions to better respond to arising company needs and to turn market changes into concrete opportunities for new developments. Our activities, originally aimed at creating customised projects, have been gradually integrated to include Supply Chain Management solutions. Today, ETICA offers solutions of variable complexity based on our own MES (Manufacturing Execution System) products for the best logistic-production process control performance. Our solutions also implement Web applications for complete integration of departments within the company and more accurate exchange of information with customers, suppliers and contractors.	www.eticasrl.com	ME	Cesare Accomazzo accomazzo@eticasrl.com 3487355672			X	
32	Eurofins - Modulo Uno Spa	Test Laboratory (renewable energies, electrical safety, acoustics, calibration center), Notifed Body for the Certification of products, Inspection Body for the safety of plants. Italian Branch for Eurofins Product Testing, a divsioni of Eurofins Multinational Corporate.	www.eurofins.it	LE	Paolo Iavagnilio (Business Development) paoloiavagnilio@eurofins.com Mob. 340.911.28.92	X			
33	Experientia srl		www.experientia.com	ME	Dr. Prof. Michele Visciòla (PhD)			X	
34	F.O.M.T. S.p.A	FOMT is a aluminium foundry lo-cated in Italy, near Turin. F.O.M.T.'s ability to integrate all the various stages, from design to casting, machining to assem-bly and to produce gravity and high pressure die castings in aluminium alloys means to sug-gest the optimal, specifically-tailored casting technology re-quired to obtain top quality at the best cost.	www.fomt.it	ME	direzione@fomt.it	X			

	Player	Short Description	Website	Stakeholder type	Contact person	Gr	NBM	C	S
35	Fiat Group Automobiles S.p.A.	The FIAT GROUP AUTOMOBILES S.p.A. relates to the exercise of social activities in the field of engines, particularly with regard to the design, production and marketing of cars, special vehicles and commercial vehicles.	www.fiatgroup.com	LE	Mr. BECCHI Tiziano Phone +39 011.0033674 tiziano.becchi@fiat.com Mr. DI GIUSTO NevioPhone +39 011.35720 nevio.digiusto@fiat.com	X			
36	Fiat Powertrain Technologies S.p.A.	The business of manufacturing and machining industry with particular reference to the study, development, manufacture, assembly and sale of engines, shafts and transmissions for motor vehicles and their assemblies, subassemblies, components, spare parts and accessories.	www.fptpowertrain.com	LE	Mr. BECCHI Tiziano Phone +39 011.0033674 tiziano.becchi@fiat.com MARANGONI Aldo Phone 39 011.0034181 aldo.marangoni@fptpowertrain.com	X			
37	Fondazione Torino Wireless	The Torino Wireless' Mission is to bring the Piedmontese ICT companies along the way of innovation and competitiveness, promoting models of collaboration, knowledge transferring and cluster pro-jects, and establish the ICT District as an international hub of technology and innovation. To achieve its mission, Torino Wireless Foundation acts on a set of dimensions: · Steering of the Districts R&D priorities and actions · Stimulating applied re-search to increase District competences, also supporting the mobility of highly skilled resources from R&D institute to district companies and funding joint projects between businesses and R&D centres · Coaching entrepreneurs, to start new enterprises and supporting the existing ones · Organizing innovative fi-nancial instruments, to support the development of · Setting networks among SMEs · Generating new opportunities at international level with education, research and attraction of talented people.	www.torinowireless.it www.poloinnovazioneict.org	DA	Marco Ramella Votta +39 3346240282 Marco.ramella@torinowireless.it	X	X	X	X

	Player	Short Description	Website	Stakeholder type	Contact person	Gr	NBM	C	S
38	General Motors Powertrain Europe Srl	Research, Development, Design and Engineering powertrains, meaning engines and transmissions for passenger cars and light duty vehicles, their systems, subsystems, components, parts and accessories	N/A	LE	Federico Galliano 0114248066 - 3489412258 Federico.galliano@gm.com	X			
39	GRüNER srl	Grüner facility near Turin is structured to perform injection molding of rubber and plastic items for automotive and white goods industry. Grüner can design and make moulds and tooling for the production of their technical rubber and plastic items. In this way, Grüner assures the best possible synergy between the design and realization phases of the mould, notably increasing the efficiency of the production cycle. Since 1997 we obtained the ISO 9002 now ISO 9001; in 2000 the AVSQ'94 certification; in 2003 the ISO/TS 16949: 2002 certification; In 2008 the ISO 14000 Environment Certification.	www.gruner.it	ME	Gianna Chiolero			X	
40	HYSYTECH srl	Hysytech is an engineering and special process equipment construction company established on 2003, in Turin, Italy. Main product is engineering focused on innovation providing total quality engineering solutions and services to our clients. We supply specialized solutions on chemical processing, traditional and renewable energy, power generation and environment treatment. Our international experience and technological background covers several fields: Engineering Prototyping, Pilot Plant and Industrial Facilities EPCM, Process and Technologies Implementation. Hysytech assist its clients during the whole development of new facilities or products, from the preliminary study to the implementation of the final technical solution. Hysytech assess technically and economically each phase to guarantee quality and client's investments.	www.hysytech.com	ME	Massimiliano Antonini	X			

	Player	Short Description	Website	Stakeholder type	Contact person	Gr	NBM	C	S
41	Interactive fully electrical vehicles - IFEVS	All aspects of System Engineering of fully electric vehicles· Vehicle chassis and body· Powertrain, · , · full design of new con-cept.· Energy and source with embedded photovoltaic· Education (courses on demand)IFEVS is a Member in charge of the vice presidency of the legal Legal network (Soggetto gi-uridico=Company)Torino e-district addressing the production of enabling tech-nologies for all forms of elec-tromobility and fleets of micro-EVs	Blank by choicewww.ifevs.com	ME	Pietro.Perlo@ifevs.com +39-3357199243	X			
42	ISMB - Istituto Superiore Mario Boella MultiLayer Wireless Solution Area (MLW)	ISMB is a non profit Research & Innovation Center operating in the Information and Communication Technologies domain in cooperation with private enterprises, institutions and Public Administration. ISMB has been set up by the two Founding Members (Compagnia di San Paolo and Politecnico di Torino). ISMB is organized in 7 research areas: MultiLayer Wireless solutions, Navigation Technologies, Pervasive Technologies, Information System Architectures and SW Technologies, Photonics, Information Management and Innovation Development	www.ismb.it www.ms-aloha.eu	R	Riccardo Scopigno scopigno@ismb.it Mobile: +39.392.0505287 Tel: +39.011.2276 603 Daniele Brevi brevi@ismb.it Mobile: +39.338.6095279 Tel: +39.011.2276 806			X	
43	Istituto Superiore sui Sistemi Territoriali per l'Innovazione- SiTI -	SiTI- Higher Institute on Territorial Systems for Innovation, is a no profit association set up in 2002 between the Politecnico di Torino and the Compagnia di San Paolo, to carry out research and training oriented towards innovation and socio-economic growth. SiTI is a permanent organization of the Compagnia di San Paolo, with a strong interdisciplinary approach, specifically devoted to territorial systems. It aims at solving complex problems through an integration of the expertise available at the Politecnico, and by linking it with other high level research centers. Its activities are concentrated in the following sectors: Logistics and transport, Environmental heritage and urban redevelopment, Environmental protection. Building on the various skills available within the Politecnico di Torino, SITI augments its capacity by cooperating with numerous researchers and specialists and other Universities and national and international research centers.	www.siti.polito.it	R	Arch. Raffaella Motta Project Manager +39 011 19751551 raffaella.motta@siti.polito.it		X		

	Player	Short Description	Website	Stakeholder type	Contact person	Gr	NBM	C	S
44	ITALECO SRL	AN-VI is a new member of the rubber family, with substantially different characteristics to those of traditional elastomers. It has the elasticity of a good rubber but it also has unusual damping capacities: by deformation it absorbs energy from an elastic material and as a damper it dissipates the energy absorbed. One part of the energy is converted into heat while the other part is returned so slowly as to have practically no dynamic effects. In solid form AN-VI can be used to reduce shock and impact stress effects as a vibration damper. Foamed it finds use with specific not too heavy loads.	WWW.ITALECO.COMWWW.AN-VI.IT	SE	FEDERICO PASTORE PHONE : +390115690295 FEDE@ITALECO.COM	X			
45	Iveco S.p.A.	Iveco is one of the world leaders in road transportation. It designs, manufactures and sells a wide range of light (2.8-6 tons GVW), medium (6-16 tons GVW) and heavy (above 16 tons GVW) commercial vehicles for on-road and off-road use. In addition to its main product offer, the company also offers after-sales and financing services, in addition to services related to used-vehicles. From the beginning, the company has been committed to safe, efficient and ecological mobility and for more than 30 years has been developing technological solutions that respect humans and the environment. It is the only producer to offer ecological diesel and natural gas engines on its entire range of vehicles. Iveco was the first full-line truckmaker to invest significantly in natural gas technology, developing engines with specific components and configurations optimized for use with CNG. From light segment vehicles (ECODaily), to medium (Eurocargo) and heavy (Stralis), all products are equipped with engines that meet the Enhanced Environmentally-friendly Vehicle standard (EEV), the strictest emissions standard currently in effect in Europe.	www.iveco.com	LE	Elena Barbero 011 00 72107 elena.barbero@iveco.com	X		X	

	Player	Short Description	Website	Stakeholder type	Contact person	Gr	NBM	C	S
46	JACOBACCI & PARTNERS S.p.A.	Jacobacci & Partners is an IP consultancy firm and is specialized in protecting innovation. Jacobacci & Partners operates globally with a full range of services relating to the protection of industrial property rights and the management of patents, design and trademark portfolios, including prior art searches, drafting and prosecuting national, European and International patent applications in the fields of mechanics, electronics, chemistry and biology; filing and prosecuting national, Community and International design and trademark applications; as well as providing technical and juridical assistance in IP litigation (patents, designs, trademarks), unfair competition; anti-infringement customs measures; due diligence of intellectual assets.	www.jacobacci.com	Pr	Mr Edgardo Deambrogi edeambrogi@jacobacci.com 011-2440311	X			

	Player	Short Description	Website	Stakeholder type	Contact person	Gr	NBM	C	S
47	KGR ELETTRONICA S.r.l.	KGR ELETTRONICA provides qualified engineering services to support the design, the development, the integration and the validation of electronic components, subsystems and systems for automotive applications.Our main competence areas are: in-vehicle communications and networking architectures, embedded software development for electronic control units, embedded software validation, vehicle electronics diagnosis and start-up.KGR ELETTRONICA stipulated an Internship Agreement with Politecnico di Torino – Control and Computer Engineering Department. Internship subjects concern innovative aspects and technological targets of remarkable interest for automotive applications (Model Based Design development, automatic code generation, AUTOSAR compliant software modules). KGR ELETTRONICA panel of Clients includes several passenger cars and industrial vehicles manufacturers as well as leader Tier 1 companies.	www.kgrse.it	SE	CENEDESE Luigi phone: +39 011 3240707 e-mail: luigi.cenedese@kgrse.it	X		X	
48	Lithops S.r.l.	Lithops Srl is a NewCo established in Torino in October 2010 with the purpose to realize lithium-ion electrochemical cells based on innovative materials for the automotive and storage markets.	http://www.lithops.it/lithops/Enter.html	SE	Carlo Novarese, 3287368336 carlo.novarese@lithops.it Sarah Ferrigno, 3479471234 sarah.ferrigno@lithops.it	X			
49	LMS International	Software and engineering services for mechatronic product design engineering. More specifically, test systems and simulation software are developed to support the mechanical and mechatronic design in terms of noise, vibration, durability, energy, motion, combustion and related controls	www.lmsintl.com	LE	Dr. Herman Van der Auweraer, Research Director Herman.vanderauweraer@lmsintl.com	X			

	Player	Short Description	Website	Stakeholder type	Contact person	Gr	NBM	C	S
50	Magneti Marelli S.p.A.	Magneti Marelli designs, develops, manufactures and sells systems and components for the automotive sector. A more and more relevant part of these systems is electronics based. The main areas of activity are: Front and rear lighting, power train systems (gasoline and diesel engine control systems and AMT ctrl systems), exhaust systems, electronics systems (instrument clusters, body electronics, infotainment and telematics systems), suspensions systems (included shock absorbers and electronically controlled systems), plastic components and modules, motorsport, after market.	www.magnetimarelli.com	LE	Luigi Ippolito Luigi.ippolito@magnetimarelli.com Piero De La Pierre Piero.delapierre@magnetimarelli.com	X			
51	MATRIX S.p.A.	MATRIX Automotive Division develops, produces and markets components (injectors, pressure reducers, filters, etc.) in the endothermic motors fed with alternative fuels (CGN-natural gas, LPG, H2). Partner-Supplier of Automotive OEMs and After Market players, worldwide significantly present in the major markets where the applications and technologies of alternative fuels are involved.	www.matrix.to.it	ME	Eng. Diego Leone – Matrix Executive Manager Mail address: d.leone@matrix.to.it	X			
52	MEC SRL	Core business of MeC srl is the exercise of activities as assistance, analysis and technical coordination in industrial, design and management fields, dealing with companies assistance in terms of technical management for the study and development of solutions in order to resolve design issues, cost analysis of all elements of the project, determination of the technological cycle and time of labour; feasibility studies and design aspects.	www.mecsrl.net	SE	FRANCESCO GAI +39 011 0370100 +39 338 8897952 francesco.gai@mecsrl.net		X		

	Player	Short Description	Website	Stakeholder type	Contact person	Gr	NBM	C	S
53	MECT SRL	Estabilished in 1982, MECT has al-ways been in continuous expansion. MECT is constituted by a dynamic and skilled team whom offers to the Customers not only electronics, but also software, ideas and services.Being on the market for thirty years, our Company gained an extensive expertise in implementation of op-erator panels, digital instruments and sensors. The wide range of stan-dard products includes operator panels based on Real Time Linux op-erating system with HMI and IEC 61131-3 compliant PLC software, CanOpen remote I / O interfaces and digital panel instruments. 100% Italian manufacturer and con-structor, the Company designs and builds on demand custom electronic solutions in different fields like ice cream industry, motorized gate and windows, glass treatment plants and clean rooms. One of its point of strength is the technical department which works to support the com-pany's mission: resolve and satisfy the Customers' requests by offering solutions tailored on particular needs.	www.mect.it	SE	GIUSEPPE MIRETTI +39 (0) 11 9664616 +39 337216357 gmiretti@mect.it			X	
54	Meritor HVS Cameri S.p.A.	Meritor is a premier global supplier of integrated systems, modules and components to the transportation and industrial sectors. With more than 100 years of axle-manufacturing experience, Meritor has become the world's largest independent manufacturer of commercial vehicle axles, offering the widest range of axle capacities and options in the industry for truck, bus, coach, trailer & military applications. Meritor is also the worldwide braking leader in both size and capability for the commercial vehicle industry, supplying more than two million brake assemblies per year globally. Meritor enjoys a market-leading position with cost of ownership optimized through the application of advanced predictive techniques and innovative manufacturing processes. Meritor's Aftermarket business supplies replacement parts for trucks, trailers, buses and vans, with customers benefitting from the company's longstanding experience in the commercial vehicle industry to the aftermarket sector.	www.meritor.com	LE	Fabio Santinato, +39 0321 423210, fabio.santinato@meritor.com Domenico Martucci, +39 0321 423 319, domenico.martucci@meritor.com	X			

	Player	Short Description	Website	Stakeholder type	Contact person	Gr	NBM	C	S
55	Minister of Economic Development, Infrastructure and Transport	The Ministry of Economic Development is responsible for a wide variety of policies, including economic development and cohesion, energy and mineral resources, telecommunications, internationalisation and business incentives.	http://www.sviluppoeconomico.gov.it/	PA	-	X	X	X	X
56	Ministry of Education, University and Research (MIUR)	It is responsible for public and private education for all schools of all levels, both public and private. For private education, responsability is limited to programs. MIUR supervises the research of the state through the appropriate structures and dedicated programmes (such as PRIN, FIRB, FAR, FISR)	http://www.istruzione.it/	PA	-	X	X	X	X
57	MONET SRL	The MONET S.r.l. is a young Italian company founded in 2001 with the aim of capitalizing on the experience held by the founders in the field of research and development in engineering.The mission is to support companies in development projects with high technological content to the achievement of new products and systems to the market. In particular, we are concerned with electrical and electronic systems are highly complex, working on all levels of the process, from design to control and testing, EMC testing by thermal analysis, the creation of prototypes and pre-series and also in small to medium volumes.The main areas of interest are:SOLUTIONS HARDWARE & SOFTWARE APPLICATIONS FOR ELECTRICAL AND ELECTRONICANALOG AND DIGITAL DESIGNCONTROL SOLUTIONS BASED ON MICROPROCESSOR AND DSPCONVERSION OF POWER FROM THE BATTERYDATA MANAGEMENT SYSTEMS WITH DEDICATED TO THE ACQUISITIONApplications on SOFTWARE AND DRIVERHIGH SPEED DATA NETWORKS 'MAN-MACHINE INTERFACEDESIGN AND ANALYSIS OF MECHANICAL SYSTEMSELECTROMECHANICAL ACTUATOR DESIGNThe specific skills MONET are used in the following areas:AUTOMOTIVE INDUSTRY, AND AIR FORCE STATIONwith:ELECTRONIC COMPONENTS DEDICATEDSYSTEMS PORTABLE AND TESTING LABORATORY.	www.monet-tech.it	SE	Ing. GRUOSSO Tel. 347.0013194 MONET SRL sede legale ed amministrativa p.zza Martiri della Libertà 3/5 - I-10098 Rivoli (TO) mail:info@monet-tech.it - www.monet-tech.it	X		X	

	Player	Short Description	Website	Stakeholder type	Contact person	Gr	NBM	C	S
58	National Research Council (CNR)	The National Research Council (CNR) is a public organization; its duty is to carry out, promote, spread, transfer and improve research activities in the main sectors of knowledge growth and of its applications for the scientific, technological, economic and social development of the Country. To this end, the activities of the organization are divided into macro areas of interdisciplinary scientific and technological research, concerning several sectors: biotechnology, medicine, materials, environment and land, information and communications, advanced systems of production, judicial and socio-economic sciences, classical studies and arts. CNR is distributed all over Italy through a network of institutes aiming at promoting a wide diffusion of its competences throughout the national territory and at facilitating contacts and cooperation with local firms and organizations. From the financial point of view, the main resources come from the State, but also from the market: even 30% of its balance sheet, an extraordinary result, is the result of revenues coming from external job orders for studies and activities of technical advice as well as from agreements with firms, contracts with the European Union and with the other international organizations.	http://www.cnr.it/sitocnr/Englishversion/Englishversion.html	R	-	X	X	X	X
59	Nova Progetti SRL	Feasibility analysis and design of engines, transmissions and their layoutFeasibility analysis and design of chassis and bodyworkFEM modelling and CAE linear, dynamic and plastic structural analysisProduct engineering	www.novaprogetti.com	SE	Stefano Iacoponi 0119591665 s.iacoponi@novaprogetti.com	X			

	Player	Short Description	Website	Stakeholder type	Contact person	Gr	NBM	C	S
60	Nova Res s.r.l. Via Bovio, 6 28100 Novara PIVA: 02202480030	Nova Res is a spin-off company aiming at becoming a partner for the start up, setup and optimization of new applicative ideas involving innovative materials. The goal is supporting industries and research centers on: - Design, synthesis, preparation and development of innovative functional materials for specific applications (POSS, Me-POSS, carbon based materials) - Coatings, sol-gel, ALD, Plasma, vacuum deposition for surface modifications - Use of advanced characterization techniques for characterization and optimization of materials (e.g. X-ray diffraction, electron microscopy SEM, NMR, IR, UV-Vis spectroscopy, Raman) - Energy and environmental certification (Life Cycle Analysis - LCA)	www.novares.org	SE	Luca Palin Cell. 3480629959 info@novares.org	X			
61	Officine componenti srl	Pressofusione particolari di alluminio / Fonderia	www.officinecomponenti.com	ME	Mr Stefano Cannariato	X			
62	Onni-Stamp S.r.l.	Onni-stamp s.r.l. is a company qualified in production, Designing, Maintenance and Management of injection mould for plastic materials.Set up in 1980 by Giorgio Goria, is able to combine the most innovative technologies with high skilled workers with a 30-year long experience. In the latest years Onni-stamp has developed his business market, supplying not only customers coming from its area (the North West Italy), but also new customers coming from the European market. Our company is able to supply high standard quality products with very competitive prices, as it has started a cooperation with some suppliers coming from “low cost” countries. This flexible and dynamic structure allows us to mange, thanks to the cooperation with some external partners, projects of different kind: from prototyping to the development and management of functional groups. For this reason Onni-Stamp think to be the right industrial partner to solve the moulding problems and not only for the moulds making	www.onnistamp.com	SE	Alessio Goria,0039 0141943110, 0039 3488689328,alessio.goria@onnistamp.com	X			

	Player	Short Description	Website	Stakeholder type	Contact person	Gr	NBM	C	S
63	Optimad engineering srl	Optimad engineering S.r.l .develops software solutions for aerodynamic analysis, design and optimization. The company, spin off of the Politecnico di Torino, has been originated from an entrepreneurial idea that involves experts in fluid dynamics at the Politecnico di Torino and at the Université Bordeaux 1. The company inherited the expertise and its mission is dedicated to innovation and technology transfer in cooperation with its academic partners.	www.optimad.it	SE	Federico Gallizio email: federico.gallizio@optimad.it phone: +39 011 19719782	X			
64	OSAI A.S. S.R.L.	THE COMPANY STARTED IN 1991 MANUFACTURING SPECIAL MACHINES FOR ASSEMBLING AND TESTING COMPONENTS EMPLOYED IN THE FIELD OF AUTOMOTIVE AND WHITE GOODS. FEW YEARS LATER A COLLABORATION WITH ONE OF THE WORLD LEADERS IN THE LASER SOURCES ORIENTED THE ACTIVITIES TOWARD MICROMACHINIG BY LASER BEAM TO CUT, WELD,MARK,TRIM ON DIFFERENT METALS AND PLASTICS. ACTUALLY THE CORE BUSINESS IS QUITE EQUALLY SHARED IN SPECIAL ASSEMBLY AND TESTING LINES FOR AUTOMOTIVE PRECISION COMPONENTS OR STANDARD MACHINES DESIGNED FOR ELECTRONIC AND SEMICONDUCTOR FIELDS AS:AUTOMATIC PICK AND PLACE AND HANDLERS, LASER SOLDERING,DEPANELING, MARKING,TRIMMING ETC.THE ACTIVIVITY OF R&D CARRIED OUT IN COLLABORATION WITH SEVERAL EUROPEAN ACADEMIC ORGANISATIONS, IS INVOLVING MORE THAN 40% OF THE TOTAL PERSONNEL (APPROX . 80 UNITS).THE MAIN GOAL OF THE COMPANY IS THE INNOVATION.	www.osai-as.it	SE	Virgilio Giorza - Phone: 0125-668311Mail: v.giorza@osai-as.it	X			
65	OXEM spa	OXEM S.p.A. was founded in 2006 with the goal to become a leading player in the Italian and European biodiesel market. Oxem is running a 200,000 tons per year, state of the art, vegetable oil refinery and biodiesel plant.	http://oxem.it/	LE	Paolo Corvo Mobile 00393284912355 Email: paolo.corvo@oxem.it				

	Player	Short Description	Website	Stakeholder type	Contact person	Gr	NBM	C	S
66	Pininfarina SpA	In more than 80 years of activity within the automotive sector, PININFARINA (PF) has built up a strong reputation in the area of styling and niche vehicle engineering and production. In particular, PF has been specialising in several transport domain (i.e. green mobility since early 1978) taking advantage from a far-ranging synergies among its different design realities: the styling and the engineering centres, the mock-up and prototype workshop the tooling and testing facilities. PF is able today to provide industry leading company with integrated systems of product development and production services in the field of sustainable and safe mobility.	www.pininfarina.com	ME	Mr. Filippo Cappadona (f.cappadona@pininfarina.it) Ph. (+39) 011 9438220 Mob. (+39) 335 7520816	X	X	X	X
67	PIRELLI TYRE SPA	Pirelli is the world's fifth largest tyre manufacturer based on revenues. With a presence in over 160 countries, the company now has 22 tyre manufacturing facilities on five continents and employs some 34,000 people.Pirelli Tyre designs, develops, manufactures and markets tyres - for motor vehicles, industrial vehicles and motorcycles - and steelcord. The business of Pirelli Tyre consists of two main segments: Consumer (about 70% of total revenues) deals with tyres for motor vehicles, sports utility vehicles (SUVs), light commercial vehicles and motorbikes; and Industrial (about 30% of revenues), which means tyres for buses, heavy trucks, agricultural machinery and steelcord, the fundamental strengthening element for radial tyres.	www.pirelli.com	LE	Chiara GUIDETTI Head of Government-Funded Projects Ph. +39.02.64422598 Chiara.guidetti@pirelli.com	X	X	X	

	Player	Short Description	Website	Stakeholder type	Contact person	Gr	NBM	C	S
68	Poli Model srl and Modarte Car Studio srl	Costruction Prototypes and Models for Automotive, Nautic, and Aeronautical. Prototypes dynamic, static, for research and demonstration.	www.polimodel.it www.modarte.com	ME	Pietro Guerrieri President	X			
69	Politecnico di Torino - DISAT - Processi di sintesi e caratterizzazione di materiali polimerici	The group mainly deals with the synthesis and carachterization of polymeric material for various applications. Skills in the aoutomotive sector: battery development; tyres with enhanced grip.	-	R	Prof. Roberta Maria BONGIOVANNI +39 011 090 4619 roberta.bongiovanni@polito.it	X			X
70	Politecnico di Torino - DAD- LAQ	ICT semantic Governance of urban areas. Public space design. Skills in the aoutomotive sector: mobility	www.polito.it	R	Prof. Luca CANEPARO +39 011 090 6546 luca.caneparo@polito.it		X		
71	Politecnico di Torino - DAUIN - Appeal (Applied Pervasive Architectures Lab)	The group is involved in the research and development of systems which provide services for the people and the community. Skills in the automotive sector: study of vehicle networks in order to support the urban traffic for the identification of the queues (smart mobility)	http://omero.polito.it/appeal/home.html	R	Prof. Giovanni MALNATI +39 011 090 7168 giovanni.malnati@polito.it		X		
72	Politecnico di Torino - DAUIN - EDA Electronic Design Automation	The group is involved in two research topics: nanoelectronics and bioinformatics. Skills in the automotive sector: fuel design of nanoelectric systems for different applications, including electric vehicles, hybryd vehicles, …	www.eda.polito.it/?option=com_content&id=67&Itemid=27	R	Prof. Enrico MACII +39 011 090 7042 enrico.macii@polito.it	X			
73	Politecnico di Torino - DAUIN - Metodi formali per l'ingegneria del software e dei sistemi (Formal methods for software engineering)	The group is mainly devoted, by a methodological point of view, to the assessment of formal methods oriented to the development of software for distributed systems. Skills in the automotive sector: programming and use of rigorous mathematical methods in the development of software for distributed systems (automotive control units).	-	R	Prof. Riccardo SISTO +39 011 090 7073 riccardo.sisto@polito.it			X	

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74	Politecnico di Torino - DAUIN - System Identification and Control	The group is involved in the modeling of physical complex systems , both on the basis of available physical information and of fully aseptic mathematical models. The group has collaborated with CRF, in the following activities: 1. Automated control of the driving of the vehicles in the highway lanes; 2, control of the side vehicle stability with ESP systems; 3.control of the vertical dynamics by means of semi-active suspensions (for comfort, handling). None of these solutions has been omplyed by Fiat in the commercial vehicles, because of management decisions. The group is also involved in another research activity, related to the study of drive-by-wire systems, in which the steering wheel of the vehicle is replaced by a joystick.		R	Prof. Vito CERONE +39 011 090 7064 vito.cerone@polito.it			X	
75	Politecnico di Torino - DAUIN- Filtering, Identification and Control of Complex Systems	The group is mainly devoted to base research, which is carried out by means of: 1., modeling, that is, the study of the methodology for modeling several types of phenomena, which can be treated as a sequence of data according to a unified method, and have many applications;2. control, that is, the model is set so as to understand its behaviour. Skills in the automotive sector: the group has developed virtual sensors for Fiat in the past.	http://www.dauin.polito.it/it/la_ricerca/automatica_automazione_e_ricerca_operativa/controlli_automa	R	Prof. Michele TARAGNA +39 011 090 7063 michele.taragna@polito.it			X	
76	Politecnico di Torino - DENERG - Cella a combustibile idrogeno	The group is mainly involved in three research topics: fuel cells, biogas and CO2. The group is essentially involved in the experimental base research by means of experimental tests carried out at the laboratory, which is provided with several test benches for testing the fuel cells with different gases. Skills in the automotive sector: fuel cell technology		R	Prof. Massimo SANTARELLI +39 011 090 4487 massimo.santarelli@polito.it	X			
77	Politecnico di Torino - DENERG - Engine Energy and Environment	The group is mainly devoted to the study of the energy conversion in internal combuston engines. The studies are mainly oriented to engines for terrestrial vehicles. Main partners in the research field are Fiat and GM Powertrain. To a minor extent, the group is also involved in engines for the production of energy and in engines for ships.	http://areeweb.polito.it/ricerca/engines/	R	Prof. Federico MILLO +39 011 090 4517 federico.millo@polito.it	X			

	Player	Short Description	Website	Stakeholder type	Contact person	Gr	NBM	C	S
78	Politecnico di Torino - DENERG - Fluid Power Research Laboratory	Skills in the automotive sector: braking, steering, suspensions, gearshift, variable valve phasing, lubrication of ICEs.	http://areeweb.polito.it/ricerca/fluidpower/	R	Prof. Nicola NERVEGNA +39 011 090 4032 nicola.nervegna@polito.it	X			X
79	Politecnico di Torino - DENERG - HPSYD	High Performances Syncronism Drive. The group os involved in electric motors, and studies the components which can convert the electric energy into mechanical energy, and viceversa. The mainly group works for external companies and is involved in PRIN projects. Skills in the automotive sector: Electric vehicles and drivelines, hybryd electric vehicles	-	R	Prof. Alfredo VAGATI +39 011 090 7108 alfredo.vagati@polito.it	X			
79	Politecnico di Torino - DENERG - Polito Engine Research Centre (PT-ERC)	The reserach unit is both involved in the theoretical and experimental applied research, in the field of the internal comvustion engines for the terrestrial propulsion, and of the hybrid-thermal powertrain. The applied research is supported by an intense base activity oriented to the development of both diagnostic and predictive approaches for the study of the fluidodynamic processes, of combustion and of pollutant emission formation in engines.	http://areeweb.polito.it/ricerca/pt-erc/	R	Prof. Ezio SPESSA +39 011 090 4482 ezio.spessa@polito.it	X			
80	Politecnico di Torino - DET - Microelectronics Electromagnetic Compatibility (EMC)	The group is mainly involved in the problems caused by the employment of integrated circuits (IC) in the devices which work in environments with high electromagnetic (EM) pollution, with specific reference to the electromagnetic interferences at high frequency (EMI). Skills in the automotive sector: the group is recognized all over the world in the automotive sector.	http://www.delen.polito.it/en/research/electronics/microelectronics_electromagnetic_compatibility_em	R	Prof. Franco FIORI +39 011 090 4141 franco.fiori@polito.it			X	
81	Politecnico di Torino - DIATI - INGEGNERIA SANITARIA	The group deals with: the definition of the environmental impact of various sectors from the anthropic activities; the evaluation of innovative technologies fpr the liquid as well as for the solid waste treatment; the study of the impact of pollutants on the environment; the carachterization and treatment of liquid as well as gaseous waste. Skills in the automotive sector: study on the impact of pollutants on the environment.	-	R	Prof. Giuseppe GENON +39 011 090 7660 giuseppe.genon@polito.it		X		

	Player	Short Description	Website	Stakeholder type	Contact person	Gr	NBM	C	S
82	Politecnico di Torino - DIMEAS - Automazione e Robotica	Particular attention is paid to the development of fluidic systems, innovative robotic actuation systems, micro-actuation systems and micro-fluidics. In order to meet the targets, a deep theoretical knowledge is required (friction, wear, non-conventional actuators, fluidics, ...) and a great interest is devoted to applicative problems. Skills in the automotive sector: study of vehic development of pneumatic systems and components in the automotive sector.	http://www.dimec.polito.it/it/la_ricerca/gruppi/automazione_e_robotica	R	Prof. Guido BELFORTE +39 011 090 6901 guido.belforte@polito.it	X			
83	Politecnico di Torino - DIMEAS - Dinamica dei sistemi meccanici e identificazione	The group deals with: the identification of vibrating system; the damping analysis; the semi-active control as well as the diagnostic of vibrating systems. Skills in the aoutomtive sector: diagnosis of vibrating systems.	http://www.dimec.polito.it/it/la_ricerca/gruppi/dinamica_dei_sistemi_meccanici_e_identificazione	R	Prof. Luigi GARIBALDI +39 011 090 6908 luigi.garibaldi@polito.it	X			
84	Politecnico di Torino - DIMEAS - H2politO	The research activity is derived from the H2politO team for the design and realization of electric/hybrid vehicles.	www.polito.it/h2polito	R	Prof. Massimiliana CARELLO +39 011 090 6946 massimiliana.carello@polito.it	X			
85	Politecnico di Torino - DIMEAS - Ipotesi - Dinamica dei flussi turbolenti	The group is mainly involved in the study of ipersonic jets, of the turbulent transport and of the hydrodynamic instability. Skills in the automotive sector: study of the hydrodynamic instability in the automotive sector.	http://areeweb.polito.it/ricerca/philofluid/	R	Prof. Daniela TORDELLA +39 011 090 6812 daniela.tordella@polito.it	X			
86	Politecnico di Torino - DIMEAS - Ipotesi - Ottimizzazione e controllo in aerodinamica	The group is mainly involved in the fluidodynamic and computational modeling, as well as in the modeling of the separation phenomenon . Skills in the automotive sector: modeling of the separation phenomenon for the reduction of the aerodynamic resistance.	-	R	Prof. Luca ZANNETTI +39 011 090 6811 luca.zannetti@polito.it	X			

	Player	Short Description	Website	Stakeholder type	Contact person	Gr	NBM	C	S
87	Politecnico di Torino - DIMEAS - Meccanica dei materiali e delle giunzioni: modelli, fatica, impatto e prove	The research activities of the group are mainly related to the following topics: characterization of the materials under static , fatigue and impact solititations; behaviour and resistance of components and structures under static , fatigue and impact solititations; influence of treatments and defects on the resistance characterisitcs, with particular reference to the fatigue, of mechanical components; methodologies for the non-destructive control of components and joints; analysis of sticked joints: solicitation, resistance criteria, behaviour under impulsive loads; analysis of the behaviour of traditional and mixed joints. Skills in the automotive sector: study of the resistance of composite materials, in partecular, of the resistance to impacts; characterization of the composite materials at high deformation rates (i.e., study of the materials during vehicle crashes) and passive vehicle safety.	http://www.dimec.polito.it/it/la_ricerca/gruppi/meccanica_dei_materiali_e_delle_giunzioni_modelli_fa	R	Prof. Massimo ROSSETTO +39 011 090 6923 massimo.rossetto@polito.it				X
88	Politecnico di Torino - DIMEAS - Meccanica del veicolo	The group is involved in the vehicle systems, which are required in order to guarantee the performance, comfort, reliability and low consumption. More specifically, the group is involved in the study of the systems of suspensions, transmission, braking and in the vehicle components related to the contact between the vehicle and the ground.	http://www.dimec.polito.it/it/la_ricerca/gruppi/meccanica_del_veicolo/ricerca	R	Prof. Mauro VELARDOCCHIA +39 011 090 6931 mauro.velardocchia@polito.it				X
89	Politecnico di Torino - DIMEAS - Progettazione meccanica di motopropulsori e componenti motore: materiali, prove, simulazioni	The research group is developing its activities on topics related to the design, experimentation and numerical simulation of materials, components and mechanical systems, specifically related to engines and to their components. The problems are faced by means of both theoretical/analytical and numerical/simulation methods, always including the experimental characterization of the analyzed materials and components. A specific interest is devoted to the industrial applications and collaborations.	http://www.dimec.polito.it/it/la_ricerca/gruppi/progettazione_meccanica_di_motopropulsori_e_componen	R	Prof. Cristiana DELPRETE +39 011 090 6934 cristiana.delprete@polito.it				

	Player	Short Description	Website	Stakeholder type	Contact person	Gr	NBM	C	S
90	Politecnico di Torino - DIMEAS - Struttura e sicurezza dei veicoli: progettazione, simulazione, ottimizzazione e prove	The research activities of the group are related to the following topics: employment of the finite element analysis and of the multibody analysis for the analysis of the static, dynamic and impact structural behaviour; development of methodologies for the topological optimization, defiinition of the shape variables, shape optimization; application of the optimization methodologies for the study and design of components and systems; experimental tests on structural elements, mainly in the automotive field, under static, dynamic and impact conditions.	-	R	Prof. Giovanni BELINGARDI +39 011 090 6937 giovanni.belingardi@polito.it	X			
91	Politecnico di Torino - DIMEAS - Tecnologia per il miglioramento del comportamento “damage tolerant” e della sicurezza dei materiali	The research activity is devoted to the improvement of the structural behaviour and contributes to the knowledge of the generation mechanisms, of the damaging and to the quantifying of the energy adsorbed by composite materials. These topics are extremely critical and important for the safety in the aerospace and terrestrial transport systems. In order to meet such an important and strategic target, a step forward is required in the design conceprs and in the choice of materials.	-	R	Prof. Ugo ICARDI +39 011 090 6872 ugo.icardi@polito.it	X			X
92	Politecnico di Torino - DIMEAS - Trasmissioni meccaniche, fatica e termografia	The group is involved in the study of the fatigue of materials, transmissions, vibrational mechanics and acoustic dynamics. Skills in the automotive sector: transmissions	http://www.dimec.polito.it/it/la_ricerca/gruppi/progettazione_e_sperimentazione_di_organi_di_trasmis	R	Prof. Francesca Maria CURA' +39 011 090 6930 francesca.cura@polito.it	X			
93	Politecnico di Torino - DIMEAS - Aerodinamica sperimentale	The main focus of the group activity is the experimental fluidodynamics and the flow control. Skills in the automotive sector: control of the flows oriented to the reduction of the aerodynamic resistance; optimization and study of the aerodynamics of land vehicles.	www.diasp.polito.it/Internal-structures/laboratorio_di_aeronautica_modesto_panetti	R	Prof. Gaetano IUSO +39 011 090 6830 gaetano.iuso@polito.it	X			
94	Politecnico di Torino - DIMEAS - Progettazione di macchine rotanti e sistemi meccatronici – Laboratorio di Meccatronica	The group is mainly involved in: 1. Control units for mechtronics applications; 2. Energy; 3. Lightweight vehicles; 4. Magnetic suspensions; 5. Mechtronic systems for internal combustion engines; 6. Mobile robotics; 7. Power actuation; 8. Remote monitoring systems; 9. Rotordynamics; 10. Vibration control.	www.cspp.polito.it	R	Prof. Giancarlo GENTA +39 011 090 6922 giancarlo.genta@polito.it			X	X

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95	Politecnico di Torino - DISAT - Applicazioni fisiche interdisciplinari della meccanica statistica	The research deals with the application of mechanical statistics to the field of matter physics and to interdisciplinary ones. Skills in the automotive sector: realization of models of complex systems which can be used for different apoplications, including the traffic of vehicles.	-	R	Prof. Giorgio KANIADAKIS +39 011 090 7331 giorgio.kaniadakis@polito.it		X		
96	Politecnico di Torino - DISAT - CRE3 - Ingegneria delle reazioni catalitiche per l'energia e l'ambiente	Skills in the automotive sector: fuel cell technology: study of catalytic reactions for aftertreatment devices.	http://www.cre3.org/	R	Prof. Guido SARACCO +39 011 090 4618 info@cre3.org	X			
97	Politecnico di Torino - DISAT - Elettrochimica	The group is devoted to the study of materials to be used in the electrochemical sector, with specific reference to lithium electrochemical generators. Skills in the automotive sector: study of lithium cells for green car applications.	-	R	Prof. Nerino PENAZZI +39 011 090 4640 nerino.penazzi@polito.it	X			
98	Politecnico di Torino - DISAT - STEPS	The group activity is related to the ceramic materials, both of the monofasic and composit types. The skills of the group cover all the phases of the material work process. Skills in the automotive sector: mechanical and thermomechanical applications of ceramic materials with high mechanical resistance at high temperatures. An example of application is the realization of ceramic materials with high porosity and resistant to high temperatures, which are applied for the retainment of the particulate matter emitted by the diesel engines.	-	R	Prof. Laura MONTANARO +39 011 090 4680 laura.montanaro@polito.it	X			
99	Politecnico di Torino - DISMA - Analisi non lineare e calcolo delle variazioni	The group main research topics are the study of partial differential equations which model linear and nonlinear phenomena, variations theory, optimization, spectral theory, convergence gamma. Skills in the automotive sector: optimization of transport networks.	http://www.dimat.polito.it/ricerca/serra.html	R	Prof. Enrico SERRA +39 011 090 7540 enrico.serra@polito.it		X		

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100	Politecnico di Torino - DISMA - Analisi numerica e calcolo scientifico	The group experience is mainly devoted to the development of numeric calculus methodologies, to the development and analysis of algorithms, to their study and implementation in advanced calculus environments, and, more in general, to the development of resolution methodologies of mathematical models applied to different fields. Skills in the automotive sector: optimization of modeling and simulation of mobolity strategies.	-	R	Prof. Claudio CANUTO +39 011 090 7543 claudio.canuto@polito.it		X		
101	Politecnico di Torino - DMEAS - Meccatronica e servosistemi	The group is mainly involved in the field of innovative systems of controlled actuation and of servo-systems, in which the functionalities of the mechanical, electrical and fluid actuation components, of the sensoring devices and of the control part are integrated. The research topics are applied in the research areas related to the intelligent servo-actuators, to the devices for the exploitment of alternative energy sources, to parallel-architecture mechanical devices and to biomechanical applications. The execution of the research activities requires functional design skills, static aand dynamic analysis of the components ans systems, simulation and experimentation. The group activity is carried out with autonomous research activities, R&D collaborations with companies and dedicated education. Skills in the automotive sector: servo-systems (working of the mechanical, electrical and fluid actuation components, of the sensoring devices and of the control part.	-	R	Prof. Massimo SORLI +39 011 090 6948 massimo.sorli@polito.it			X	

	Player	Short Description	Website	Stakeholder type	Contact person	Gr	NBM	C	S
102	POWERTECH ENGINEERING SRL	POWERTECH Engineering is a spin off company of the Politecnico di Torino founded in 2007 providing engineering services in the field of internal combustion engines and vehicle simulation. A broad range of problems in engine design and complex powertrain systems development are tackled through 1D thermo-fluid-dynamic analysis.	www.powertech-eng.com	SE	ENRICO PAUTASSO, TEL. 0172050115 EMAIL: ENRICO.PAUTASSO@POWERTECH-ENG.COM	X			
103	Proxima Centauri srl	Connection management information systems, where the data resides and economic tasks are assigned, exchanging real-time information with half-board systems, where the data are generated	www.jeerp.org	SE	gianni.ferrero@proxima-centauri.it			X	
104	Regione Piemonte	Piedmont stands among the top Italian Regions for investment in R&D and the first one for expenditure on innovation in the manufacturing sector. The regional strategy is based on a specific Regional Law (the R.L. n. 4/2006) that officially instituted “the Regional System for Research and Innovation” that includes the main institutions and stakeholders that develop and promotes RSI activities. The Law intends to promote research and innovation, consolidate the research system and create a culture of systematic evaluation and performance improvement within the field of innovation policy. Associated with the R.L. 4 are two implementing official documents: the PTR-Three years Research Plan, the policy instrument that defines the operational tools and the interventions for the policies on R&D and the General Guidelines for R&I policies. The PTR has a close correlation with another important regional programming document, the “Multiannual Programme of intervention for production activities” associated with the regional framework law 34/2004.	http://www.regione.piemonte.it/	PA	-	X	X	X	X

	Player	Short Description	Website	Stakeholder type	Contact person	Gr	NBM	C	S
105	Sequoia Automation srl	Sequoia Automation S.r.l. was originally founded in 1997, in the Turin area, as a R&D centre inelectronic design, technical software development and mechanical engineering. The in-houseexpertise allows the Company to develop both hardware and software solutions, with applicationfields which extend to every kind of industrial and measurement problems. The solutionsengineered make use of smart sensors, electronicvibration and sound wave analysis, parallel robotics, hardware and software interfaces. Sequoiahas a consolidated experience in taking part to research projects at European level. Sequoia Automation is a SME, however it has gathered over the years the experience with which toenvisage ambitious and complex projects. From the 2004 Sequoia is successfully carrying on and co-ordinating research activities related to the KiteGen Project. Sequoia is carrying on severalprojects related to energy saving and alternative traction solution in the automotive sector.	www.sequoiaonline.com	ME	Marcello Corongiu +39 011 9415745 m.corongiu@sequoiaonline.com	X			
106	SILA HOLDING INDUSTRIALE - Product Engineering R&D	Design development and testing of gearshift systems and remote control systems for the automotive industry.	www.grupposila.com	ME	Luca Caffaratti +39 011 9001211 l.caffaratti@grupposila.com			X	
107	STEP S.p.A.	ACTIVITY OF AUTOMOTIVE ENGINEERING	www.stepspa.com	ME	FABRIZIO BERGUI 338/5480078 fabrizio.bergui@stepspa.com	X			

	Player	Short Description	Website	Stakeholder type	Contact person	Gr	NBM	C	S
108	SynArea Consultants s.r.l.	SynArea Consultants for over 25 years developing distributed information systems to improve the efficiency of business processes, both intranet-extranet and client/server technology. In recent years has invested heavily in R&D activities and owns a multimedia sw innovative platform for creating interactive explorable 3D animations in real-time called 3DOORS Framework.	www.synarea.com	ME	Daniele Zambon daniele.zambon@synarea.com Danilo Sopranzi danilo.soprani@synarea.com Guido Coppo guido.coppo@synarea.com		X	X	
109	Tecart srl	The Company, founded twenty years ago, is a leading company in foundry mold construction. Actually in the workshop are available the most modern ma-chining facilities (5 axis CNC ma-chining centers, CNC lathes, EDM machines) supported by a long time expertise in mechanical constructions and in CAD-CAM's engineering. TECART can suggest to the Cus-tomers the best tool between quality and costs, with higher du-rability and productivity	-	ME	segreteria@fomt.it	X			
110	Tecnologie Automobilistiche E Stile s.r.l - T.A.S.	T.A.S. develops style, engineering and prototypes. T.A.S. defines the style, develops cars and integrates complete systems or individual components, as well as the construction of prototypes and models. The holistic approach, interdisciplinary, which is adopted for the car, allows to work jointly on product development and process, ensuring the achievement of significant savings in development costs.	www.tasfissore.com	ME	Dott. Ing. Carlo Damiani carlo.damiani@tasfissore.com +390172488435	X			

	Player	Short Description	Website	Stakeholder type	Contact person	Gr	NBM	C	S
111	Terra del Fuoco	Terra del Fuoco is an association for social promotion founded in Turin, Italy, in 2001. Promoted by a young people's movement, it aims at supporting a process of European integration based on the dignity and rights of persons, on the growth of active citizenship and on social inclusion. Our approach pursues the synergy between three different concepts: scientific, commercial and socially sustainable. Our mission is to participate in sustainable development, with a special focus on environment and energy. The main areas of interest are renewable energy, energy efficiency and sustainable mobility; but the main objective is related to the quality of life, which brings the association to operate with an ethical and socially sustainable approach. This is reflected in our operation: one of our business units is specialised in energy-efficient building, while another is specialised in the installation of renewable energy systems.	www.terradelfuoco.org	CA	Ing. Massimiliano Curto Mobile: +39 333 5268209 massimiliano.curto@gmail.com	X	X	X	X
112	Teseo spa	Design, Engineering, Prototyping, Manufacturing Of Embedded Systems, Sensing Systems, Test Equipment	www.teseo.net	ME	Stefano Serra sserra@teseo.net +393481505212	X		X	

	Player	Short Description	Website	Stakeholder type	Contact person	Gr	NBM	C	S
113	Torino Chambers of Commerce	The Torino Chamber of Commerce is a public institution with autonomy of statute, regulation, management and accountability, and relies on a flexible structure, benting on innovation and efficiency based. The Chamber of Commerce is almost entirely self-funded. Its income derives largely from the annual Membership fee paid by all companies in the Province that are listed in the Register of Enterprises. This income is primarily employed to support members' business activities. Thanks to its 350 employees, the Torino Chamber of Commerce plays a key role in the promotion and the development of the local economy. There are almost 6 million businesses in Italy, 400,000 of these are based in Piedmont and over 200,000 in the Torino Province. Then, the Chamber's most important administrative activity is keeping the Register of Enterprises, which is one of the organisation's strong points, an archive full of data which can be consulted anywhere in Italy, thanks to the computer network of the Chambers of Commerce (from the type of activity they perform to their balance sheets).	http://www.to.camcom.it/Page/t01/view_html?idp=7055	PA	-	X	X	X	X
114	TRW Automotive Italia s.r.l. –Occupant Restrain Systems Division	TRW Automotive is a global leader in automotive safety, producing one of the largest arrays of active and passive safety technologies. Our presence in Italy in general and specifically in the Piemonte region, beside several production plants, includes dedicated Engineering support for customized system applications and developments. System integration play an important role by means of integration between active and passive systems, providing pre-crash additional functions in order to enhance the safety of pedestrians, drivers and passengers.The continuous contacts with the Politecnico di Torino can be specifically remarked as important partnership for dedicated numerical and experimental activities.	www.trw.com	LE	Sergio Fassio +39 0116817226 sergio.fassio@trw.com	X			

	Player	Short Description	Website	Stakeholder type	Contact person	Gr	NBM	C	S
115	TRW Automotive Italia s.r.l. -BRAKING Division	TRW Automotive is a global leader in automotive safety, producing one of the largest arrays of active and passive safety technologies. Our presence in Italy in general and specifically in the Piemonte region, beside several production plants, includes dedicated Engineering support for customized system applications and developments as well as University collaborations; concerning this last point, the continuous contacts with the Politecnico di Torino can be specifically remarked as important partnership for dedicated numerical and experimental activities integrated into our Global Engineering Technologies. Our new brake systems will provide regeneration capabilities for all drive train concepts and will be able to improve today's braking performance also for what is concerning the system integration to Driver Assistant Systems. . Additional modularity and cost optimization could come from 3rd. party hardware and software integrations	www.trw.com	LE	Paolo Munaretto +39 3358244074 paolo.munaretto@trw.com	X		X	
116	TRW Automotive Italia s.r.l. –Electronics Division	TRW Automotive is a global leader in automotive safety, producing one of the largest arrays of active and passive safety technologies. Our presence in Italy in general and specifically in the Piemonte region, beside several production plants, includes dedicated Engineering support for customized system applications and developments. Chassis systems play an important role by means of Cognitive Safety Integration providing inter domain links between Braking, Steering, Suspensions and Occupant Restrain Systems as well as using synergies of sensors, controller strategies and pure smart actuators.	www.trw.com	LE	Marco Chiosso +39 0116817247 marco.chiosso@trw.com	X		X	
117	TRW Automotive Italia s.r.l. –Steering Division	TRW Automotive is a global leader in automotive safety, producing one of the largest arrays of active and passive safety technologies. Our presence in Italy in general and specifically in the Piemonte region, beside several production plants, includes dedi-cated Engineering support for customized system applications and developments. System inte-gration play an important role by means of torque overlay inter-face providing a steering based additional actuation to improve vehicle active safety.	www.trw.com	LE	Alessandro Vitali +39 0116817217 alessandro.vitali@trw.com	X			

	Player	Short Description	Website	Stakeholder type	Contact person	Gr	NBM	C	S
118	Università del Piemonte Orientale "A. Avogadro" Dipartimento di Scienze e Innovazione Tecnologica Centro Interdisciplinare NanoSiSTeMI	Nano-SISTEMI Interdisciplinary Centre (coordinator Prof. L. Marchese) has been founded at the end of 2005 by the University of "Piemonte Orientale" with a permanent staff of 8 professors and 6 researchers. More than 20 PhD students and post-docs are currently employed and, in addition to these, above 40 researchers of other Universities are affiliates to the Centre. Researchers of the NanoSISTEMIhave a long experience in solid state chemistry and in the use of top level instrumentation for the characterization of the nature, structure and reactivity of both bulk and surfaces of solid materials: IR, Raman, UV-Vis-NIR spectroscopies and thermal analysis (TGA/DTA), X-ray diffraction (XRD) and solid state NMR techniques. The most innovative computational approaches for modeling the properties of bulk, surfaces and interfaces are also used.	www.disit.unipmn.it www.centronanosistemi.it	R	Prof. Leonardo Marchese Tel. +39 0131 360262 Fax. +39 0131 360250 Email: leonardo.marchese@unipmn.it	X			
119	VE&D srl	Automotive Engin VE&D beginnings can be traced back to 1963, when the Turinese office was founded, VE&D with its long experience and skills is one of the most important, independent Engineering offices in Italy.With 120 highly skilled professionals divided between the two headquarters, one in Turin and one in Brescia. VE&D offers a complete service package of supply chain procurement, supplier qualification, product design, calculations, detailed drawings, dedicated software development, prototype assembly, validation within the engine, transmission, chassis, axles, integrated electrics and electronics using the most advanced CAD, CAE systems and simulation software. Energy saving, optimization of battery usage, integration of electric traction.Expertise Areas are:Project Management Engine : diesel and gasMotor : electricTransmissions for agricultural, material handling truck, industrial truck and passenger carsPassenger car & Industrial & Agricultural Vehicle designVehicle dynamics Whole Vehicle layoutMechatronic systems	www.veandd.com	TA	Ernesto Gallinaro egallinaro@veandd.com 0113240501	X			

Interested in knowing more or taking part in the project?
Please don't hesitate to contact us.

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CAPACITIES

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