ADVANCED DRIVER ASSISTANCE SYSTEMS

INVEST IN SPAIN
Investment opportunities in the automotive sector in Spain
Driver assistance aims to increase overall safety (active and passive) and driving capabilities. The term "advanced driver assistance systems" (ADAS) refers to a series of systems comprising a variety of features: navigation, speed control, driving assistance, automatic parking, collision warning, etc.
II. BUSINESS IDENTIFICATION

Definition of the business area

The business is the exploitation and marketing of advanced driver assistance technologies developed by Spanish agents in R&D projects.

These technologies can provide intelligence inside the vehicle, allowing it to detect driver risk behaviors and prevent accidents.

They also provide increased driving comfort and safety by helping to maintain a constant speed, and to guide and assist parking, among other features.
The developed technologies position prominent Spanish agents in the early links of the value chain. These are essentially developers and producers of components and modules for the assistance systems. The next stage is integration by the original equipment manufacturer (OEM), followed by marketing and sales. Bosch and Valeo have facilities in Spain.
Some examples of these systems include:

- Parking assistance
- Adaptive Cruise Control (ACC)
- Lane Keeping Assistance (LKA)
- Automatic vehicle control
- Other types of application: Intelligent speed warning (ISA), night vision, adaptive light control, pedestrian protection system, traffic sign recognition, blind spot detection, vehicle-vehicle communication, etc.
In Spain the SERNAUTO association of equipment manufacturers and automotive components incorporates a large proportion of Spanish firms with capabilities to fulfill this business opportunity. Of particular note are the following R&D agents and companies engaged in these technology areas:

- **CIE AUTOMOTIVE**: Automotive components and subsystems manufacturer.
- **FITSA**: Technological Institute Foundation for Motor Vehicle Safety.
- **TECNALIA AUTOMOCIÓN**: Business Unit devoted to the Automotive Sector within the Tecnalia R&I Foundation.
- **TECNALIA INSIA-UPM**: Automotive Safety and Research Institute, linked to the Universidad Politécnica de Madrid.
- **CIDAUT** Technology Centre.
- **ADASENS Automotive**, a joint venture specialized in ADAS systems, created by the Spanish multinational FICOSA and the Japanese multinational OMRON (JP). Adasens is headquartered in Germany with offices in the province of Barcelona.
Current Situation of the Business in Spain (II)

• The Universidad Carlos III de Madrid is developing research in this area.
• In collaboration with the Universidad Politécnica de Valencia, the Institute of Design and Manufacturing initiated a project in 2011 to develop an Assisted Manual Steering System with haptic, visual and auditory feedback in industrial vehicles.
• A large number of companies and agents participate in the development and marketing of products focused on ITS and mobility, such as ACCIONA Infraestructuras, APIA XXI, API Movilidad, AYESA, Fundación CARTIF, CEMOSA, CIDAUT, CPS Ingenieros, EIFFAGE, Grupo ETRA, Euroestudios, G@TV-UPM, Indra, INECO, ITS España, LISSIT-UPV, SICE and VALORIZA, among others.
III. BUSINESS ANALYSIS

Current Situation of the Business in Spain (III)

Map of Spanish agents with capabilities in vehicle safety and transport (left) and vehicle electronics (right) (Source FEDIT 2010)
IV. PROJECTED EVOLUTION AND OPPORTUNITIES

Projected Evolution

In Europe, significant growth is occurring in the incorporation of ADAS systems, due to the substantial effort to increase driver safety and comfort that is taking place within both the industry and European governments.

It is estimated that **ADAS software systems could reach 9,300 billion dollars in 2020, experiencing strong growth from the 4,500 recorded in 2008** (source: Juliussen & Robinsson, 2010).
Short and mid term opportunities

- Short-term opportunities include the possibility of applying **industrial property tools** to the technological developments made by Spanish R&D agents.

- The short-term opportunity would consist primarily in the sale or licensing of results of R&D projects already carried out, or in **commissioning consortia and joint ventures** to make use of the results.
V. REASONS FAVOURING THE DEVELOPMENT OF THE INITIATIVE

The presence of a large number of vehicle manufacturers, highly developed technological capacities and excellent professional qualifications stand out as reasons to support the initiative in Spain.

SIGNIFICANT SETTLEMENT OF MANUFACTURERS

EXISTENCE OF TECHNOLOGICAL CAPACITIES

EXCELLENT QUALIFICATIONS
VI. CONSTRAINTS

The legal framework includes regulations on communications with the vehicle itself and other vehicles or ITS:

• The regulations on the use of the radio electric spectrum in Spain, and specifically the National Frequency Allocation Plan (CNAF) that dictates the spectrum in Spain. The CNAF controls the allocations to radio electric services and the uses of the different bandwidths in Spain.

• Several thematic groups organized by ITU (International Telecommunication Union), FITCAR and CARCOM for the standardization of communications in vehicles.
VI. CONSTRAINTS

Legal framework (II)

And on road safety:

• RDL 339/1990 of 2 March, approving the text articles of the Road Safety Act (BOE No 63, March 14, corrigendum BOE No 185 of August 3).
• Changes to the previous basic regulations.

International standardization norms need to be deployed for these systems to ensure their safety and interoperability.
VI. CONSTRAINTS

Technological constraints

With respect to technology, it is necessary to make progress in standardisation for communication systems between vehicles and ITS to allow interoperability.
VII. CONCLUSIONS

• Significant growth is occurring in the incorporation of ADAS systems, due to the substantial effort to increase driver safety and comfort that is taking place within both the industry and European governments.
• The presence of a large number of vehicle manufacturers, highly developed technological capacities and excellent professional qualifications stand out as reasons to support the initiative in Spain.
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