

## Governance and Finance

HTAS is a lean organization that executes the programs with maximum involvement of the contributing partners. The funding partners form a General Assembly which decides on the annual business plan. The General Assembly forms a Program Committee to maintain close contact with the Program Office which manages the programs and finance in line with the business plan. The Technical Advisory Board advises on new R&D programs, monitors market developments and provides new input for the Innovation Program. The HTAS program currently represents an overall investment level of more than 260 million euro. The Ministry of Economic Affairs funds the Innovation Program based on equal contributions from industry and knowledge partners. The ministry takes part in the General Assembly, and has the final decision on funding of proposed projects. An operational role for government is planned to facilitate pilots and demonstration projects in the Driving Guidance area.

## Ambitions and Planning

The Netherlands aims to become an international innovation hotspot for Driving Guidance and Efficient Vehicle. The industry and knowledge institutes are strong, focused, ambitious and committed. The HTAS Innovation Program is in line with government goals, and the innovations which have been initiated by HTAS meet urgent needs of society. The economy will benefit in both social (mobility and environment) and economic (revenues and employment) terms. Together, the Dutch automotive industry and government are in an ideal position to create the enablers for innovation and to realize an internationally distinctive program. Where possible threats are identified, these are linked to potential solutions. The program was started in mid-2007 and will run for a 5-year period. Because of the international character of the automotive industry, participation by organizations in other countries is actively encouraged.



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# Dutch Drive in Automotive Technology



Empowered by  
Ministry of Economic Affairs



# HTAS Automotive Innovation

## Introduction

The Dutch automotive industry consists of over 200 companies, mainly suppliers, with specific strengths in materials, mechatronics, embedded systems and heavy-duty vehicles.

Academic research and education are concentrated in technical knowledge and education institutes. In this area TNO is a top technological institute in the related areas of integrated safety, vehicle dynamics, powertrains, human factors, mobility, logistics and ICT. The industry benefits from knowledge institutes such as the Embedded Systems Institute (ESI), the Holst Centre and top-ranking cross-border institutes like IMEC, RWTH, FEV, Fraunhofer and IKA/FKA.

The Dutch automotive industry has joined forces to create the HTAS Innovation Program. HTAS was initiated by the Federation Holland Automotive (FHA), and is set up as an open program in which industrial partners, knowledge institutes, both national and international, and government participate. HTAS is based on a common vision and policy that can be summarized as follows:

- The Dutch automotive industry has chosen 'Driving Guidance' and 'Efficient Vehicle' as its primary focal areas for growth and innovation.
- An 'Enablers' program on Education, Knowledge Transfer and Business Development is needed to support innovation by and development of SMEs as well as growth in employment.
- The goal is to increase turnover from 12 to 20 billion euro and employment by 10,000 FTEs by 2015.

## Driving Guidance

Driving Guidance is the area of automotive ICT. Electronics is put to use for information, entertainment and driver support, and will ultimately take over driving tasks. The goal is to improve traffic flow, safety and sustainability.

### The connected car

This is the new world of external systems that connect to the car or vice versa. The car is connected to the outside world through two-way communication for improved safety, traffic management (floating car data, road billing), infotainment downloads, internet, repair, security etc. The connection is wireless and increasingly autonomous, and will use a multitude of protocols for different purposes. Proposed projects are describing advanced I2C, C2I and C2C applications.

### Vehicle Dynamics Control

Today, advanced chassis control systems use motion-based sensing of the vehicle body and wheels as input to counteract undesirable vehicle motions. Directly measuring the forces between the tire and the road has not yet been possible. New sensing techniques, including virtual sensors, now allow these forces to be measured directly. This enables earlier, more accurate preventive actions to be taken improve vehicle handling and stability. New and integrated chassis control strategies are being developed for a range of situations and vehicles.

### Integrated Human Machine Interaction (HMI)

The load of new information systems in vehicles aids, but also distracts, the driver. The objective of the HMI program is the development of generic integrated and adaptive Human Machine Interaction for vehicles. This will increase driver comfort and reduce workload, thereby decreasing traffic risk and increasing the added value of support and warning systems for the driver. An integrated and adaptive HMI tunes the different functions to each other as well as to the state of the driver. The flexible architecture allows application in a wide range of vehicles. Prototypes will be validated in a demonstration truck, a bus and a car.

## Efficient Vehicle

CO2 emissions are a growing concern for climate change. Despite worldwide research on alternative energy sources, the internal combustion engine is expected to remain the main propulsion concept for the next twenty years. The prime target for the foreseeable future is the reduction of fuel consumption. The 'Efficient Vehicle' focal area aims for an increase in the overall power efficiency of diesel-powered Heavy Duty vehicles by twenty per cent.

### Efficient Powertrain

The demand for efficient, clean vehicles not only requires optimal subsystems such as engine, after treatment and transmission, but also increasingly calls for an integrated control approach to the complete powertrain. The content of this program focuses on real-time control, sensors and actuators. Other topics of investigation include new propulsion technologies and transmissions in combination with I2C information.

### Electric Vehicle Technology

The HTAS Program Electric Vehicle Technology (EVT) focuses on components and systems, strengthening the competitive position of the Netherlands as supplier in the automotive B2B market. There are five areas of interest: chassis and body, powertrain (including batteries), control, auxiliaries, and integration (including HMI and interface of the vehicle with the infrastructure).

### Light Constructions

The Light Constructions program aims to develop technologies for significant weight reduction in specific areas which, as well as reducing fuel consumption, offer additional benefits for other vehicle properties such as comfort, vehicle dynamics, safety or noise reduction. The program will also work on production technology for composites to meet automotive requirements, and new areas for plastics to replace metals.

## Enablers

Innovation is not only a matter of technology. A number of non-technical issues need to be resolved to support a successful program.

### Education

In consultation with industry, new specialized automotive education programs are being developed at Eindhoven University of Technology and other education institutes to support sustainable growth of the sector.

### Knowledge Transfer

To enhance the valorization of knowledge in new products, this program intensifies cooperation between knowledge institutes and industry, especially SMEs, for example through network activities for knowledge dissemination and large-scale demonstration projects.

### Business

To support SMEs in managing the changes in the value chain, this program focuses on new business models and professionalism, attracting finance for innovation and marketing support.