Hellenic Institute of Transport

annual report 2009

Centre for Research and Technology Hellas
CE.R.T.H.

Hellenic Institute of Transport
H.I.T.

January 2010

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FOREWORD

The present report of 2009, dedicated to many friends and collaborators of the *Hellenic Institute of Transport (H.I.T.) of the Center for Research and Technological Development of Greece (CE.R.T.H.),* is the tenth in line! On March 2010 we complete 10 years since our official date of institution on March 2000, with Presidential Decree 77. This is also the date of the creation of CE.R.T.H.

By going through our last 10 issues of annual reports (they can be found in our site www.hit.certh.gr) one can see quite characteristically the progress made all these years. In 2009, like all previous years, the Hellenic Institute of Transport extended its research and its infrastructures and moved in its new building in Thessaloniki (where the headquarters are located). In this modern building, with a total space of approximately 2500 sq. meters, our researchers are involved in state-of-the-art research through dozens of research projects funded by European or Greek sources but also internally funded.

The activities of HIT in the past year 2009 do not only refer to the execution of research projects. We continued during this year other activities that mainly refer to the field of road safety in Greece, international cooperation and promotion of collaboration and excellence in transport research, and the development, of new data and software programmes, that form basic research tools for all researchers. Most notable is the progress we made in further developing our *Internet Portal* for the collection – analysis –management – and distribution of data in the field of Transport in Greece. This most fundamental of our research infrastructures, known as KOMVOS (the Greek word for Node - www.hit.certh.gr/komvos) is continuously under improvement and it is hoped that at the end it will form a most useful innovatory and state-of-the-art tool for the whole of Greek (and international) research community and policy makers.

We also participated, in 2009, in many road safety “road shows” throughout Greece in collaboration with local traffic Police units, and other local organizations (mainly municipalities). At the same time HIT holds the Chair of FERSI (the European Organisation of Transport Research Institutes).

In the other fields, high level personnel from H.I.T. has participated - in leading roles - in various international transport research activities and fora. Out of these activities it is noteworthy to mention the chairing of the Transport Advisory Group of EU’s DGs RTD and MOVE, and the duties of editor-in-chief of the *European Transport Research Review – ETRR*, performed by H.I.T. personnel. For these activities (and the chairing of the working Group on US-EU transport research collaboration, the past 3 years), the undersigned Director of H.I.T. was awarded in 2009 the “Certificate of Appreciation” of the Transportation Research Board (US Academy of Sciences) “for his role in producing the TRB/ECTRI report on International Transport Research Collaboration”.

In 2009, we also fully established and activated the two new branches of H.I.T. that were initiated in 2008. These are the 2nd Branch in Athens (Mesogeion Avenue) and the new Branch of Thessaly in the city of Volos. These branches employ more than 10 researchers and administrative personnel.

We look forward with optimism to our next 10 years of activities and we believe that this new decade will also be a decade of progress and fulfillment of goals and visions for all of us in all fields of our activities.

I want to thank again all scientific and administrative personnel of H.I.T., as well as our external subcontractors and collaborators, because thanks to their work the Institute is now a well established and internationally acknowledged center of excellence in the field of Transport.

Prof. G.A. Giannopoulos
Director, Hellenic Institute of Transport

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2009 IN A GLANCE

Transport research in Greece, as in many other sectors, relies on strong research institutions that will be able to lead and coordinate research activities, assuming appropriate infrastructure is in place.

The Hellenic Institute of Transport (H.I.T.) is definitely one of those institutions leading this effort.

In 2009, the Hellenic Institute of Transport (H.I.T.) was active in the areas below:

- Applications of new technologies in Transport, as part of developing the «Intelligent Transport Systems» (ITS) of the future;
- Promotion of innovative practices in co-modal transport;
- Road safety improvement research and applications, with activities concerning drivers, pedestrians and vehicles;
- Freight transport management using advanced technologies;
- Urban and interurban Public Transit improvement and applications;
- Information systems applications for making travelling easier for passengers, particularly with multi-modal transport;
- Support urban mobility emphasizing on the environmentally friendly trips;
- Optimisations in terminal station access for passengers.

During 2009, H.I.T. managed to build up its research infrastructure with a new motorbike simulator and hybrid motorcycles. At the same time, the European Economic Area (EEA) funding helped to develop an up-to-date traffic management centre and urban mobility center for the city of Thessaloniki in cooperation with main stakeholders of the Perfecture and other scientific Institutes, which will be launched in 2010. The project is entitled *«Intelligent urban mobility management and traffic control system for the improvement of the urban environment quality in the central area of Thessaloniki's agglomeration»*, and is expected to be the 'flagship' of the new technologies and 'urban mobility' policies application in Greece.

In 2009 all sectors and subsectors continued their successful work in implementing research projects. The Institute's total research projects for this year came up to 45 in total.

In parallel with doing research and running research projects, H.I.T.'s scientists published a total of 48 papers in scientific journals, conferences or seminars in 2009. Additionally, they promoted the Intistute's work with a series of over 150 interviews or presentations to the Press and the Media.

At the same time, H.I.T. continued its educational work in 2009, through its ongoing involvement in the Aristotle University of Thessaloniki's cross-discipline *«Planning, Organization and Management of Transport Systems»* Postgraduate Studies Programme (MSc).

Finally, in October 2009 the new H.I.T.'s office and laboratory building was inaugurated on a site right next to CE.R.T.H.'s (Greek: E.K.E.T.A.) in Thessaloniki's Technology Park, on the 6th klm of the Thessaloniki – Thermi Rd. With these new offices, H.I.T. now has the space needed for housing its Departments and for even more activity thereof across the board.

THE HELLENIC INSTITUTE OF TRANSPORT

Figure 1:
The new offices of H.I.T. in Thessaloniki.

Legal Status

The Hellenic Institute of Transport (H.I.T.) was established with Presidential Decree 77/2000. The Center for Research and Technology Hellas (CE.R.T.H.) was also founded by the same Decree.

CE.R.T.H. incorporates today the following Institutes: the Chemical Process Engineering Research Institute (C.P.E.R.I.), the Informatics and Telematics Institute (I.T.I.), the Hellenic Institute of Transport (H.I.T.), the Institute of Agrobiotechnology (IN.A.), the Institute for Solid Fuels Technology and Applications (ISFTA), and the Institute of Biomedicine and Biomolecular Research (I.B.B.R.) into a single not-for-profit private-status legal entity named «Centre for Research and Technology Hellas - CE.R.T.H.». CE.R.T.H. (and consequently H.I.T.) is under the supervision of the General Secretariat for Research and Technology (G.S.R.T.) which was under the Ministry for Development until the end of 2009. Today though is under the Ministry of Education, Lifelong Learning and Religious Affairs.

Figure 2:
H.I.T.'s offices in the city of Volos (Thessaly Branch)

Headquarters - Branches

H.I.T.'s headquarters and main buildings are in Thessaloniki, located within the Thessaloniki Technology Park on the 6th km Charilaou-Thermi Rd.

The construction of the new offices of H.I.T. was concluded in 2009 comprising of 2 storeys and 2 underground laboratories and parkings, fully equipped in order to cater its ever-growing requirements for staff and infrastructure.

H.I.T.'s Athens branch has been operating since 2004 with offices located in the Alimos area. This branch is the biggest in Athens in terms of staff (12 persons) and many research projects.

Ever since mid-2007 a second branch operates within the CE.R.T.H. premises at the ARKAT builing on Mesogeion Str., Athens.

Finally, in February 2009 a new H.I.T. branch was established in the region of Thessaly, in the city of Volos. This branch focuses on the cooperation with the academic staff in the field of Transport, of the University of Thessaly (Department of Civil Engineering and Department of Planning and Regional Development).

H.I.T.'s Mission - Objective

According to Presidential Decree 77/2000 H.I.T.'s mission is to provide research and research support services, as well as to support policymaking and decision-making in matters of land, maritime, air and intermodal transport operation, organisation, planning, standardisation, economic analysis, management, mode technology, and impact thereof, in Greece. Also included is the provision of expert research services in the above areas to third parties. Additionally, H.I.T. collaborates with established Transport institutions abroad and represents Greece in relevant fora.

Specifically, the Hellenic Institute of Transport undertakes the following activities:

- Research projects or specialized studies (basic and applied research).
- Organising and running a Transport documentation centre, focusing on documenting the Institute's research activities and publications in Greece.
- Formulating and proposing standards and model processes within its relevant field, without supplanting the role of standards production bodies.
- Implementing and maintaining databases and data within Transport.
- Translating and publishing international Transport-related regulations.
- Disseminating the results of research carried out in the Institute to Greek organisations, especially in the Public Sector.
- Promoting bilateral or multilateral partnerships with similar research institutes and organisations in Greece and abroad, particularly in Southeastern Europe.
- Representing Greece on international bodies and committees on the fields of its expertise.
- Organising conferences and international events.
- Organising programmes of professional development and training for specific user groups in the area of Transport, in fair competition on the market.
- Sharing in the quality control of services offered in Transport, and issuing certificates thereof.
- Publishing its research results in Greek- or international journals and conferences.
- Producing regular reports (annual or biennial) documenting developments in Greece's overall system of transport, as well as its various subsystems (road, rail, maritime, air).

H.I.T. may also provide private organisations with scientific support and documentation in all the areas mentioned above providing data and services through the H.I.T. PORTAL as well as services on specialized research fields (i.e. special algorithms and forecasting models in the field of Transport and traffic).

Figure 3: The CE.R.T.H. Building Complex in Thessaloniki.

Organisation Chart

As of 31 December 2009, H.I.T.'s organisational structure and staff are shown on Figure 3:

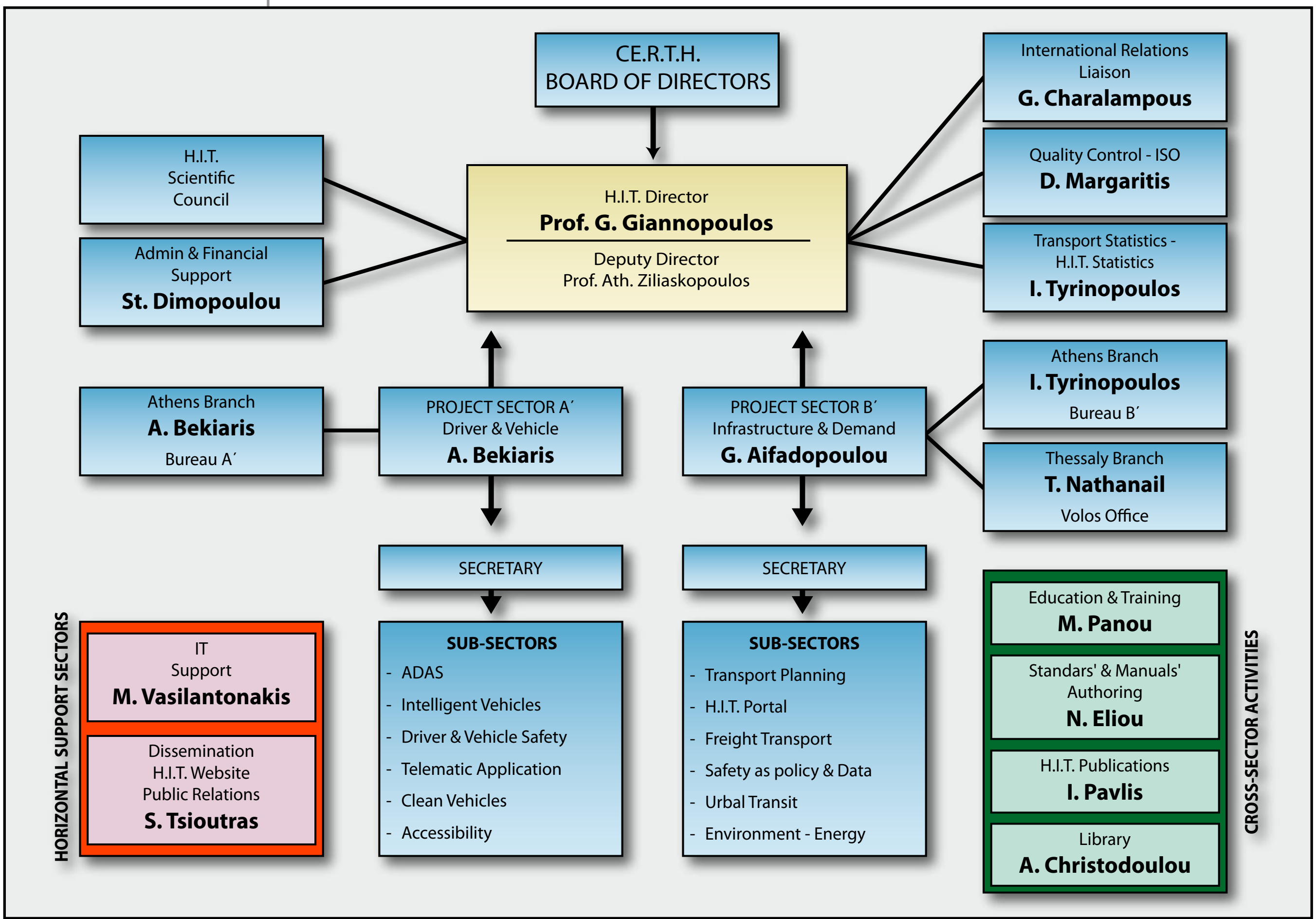


Figure 3: H.I.T. organization chart for 2009

Sector's A objective includes all issues concerning drivers' behavior, design and development of systems enhancing the vehicle's performance and finally the study of all relating to the driver-vehicle system issues.

Some of **Sector's A** objectives are:

- ICT – Information Communication Technologies applications on « smart » vehicles
- Advanced vehicle and fuel technologies ("clean" vehicles)
- Advanced Driver Assistance Systems (ADAS)
- Drivers', instructors' and users' training
- Advanced driving and vehicle simulation systems
- Advanced Driver Assistance Systems (ADAS) for impaired category users
- Road safety (on a driver-vehicle system improvement level)
- Mobility issues in the aspects of vehicle-driver technology

Sector's B objective includes all issues concerning the design, study, management and operation of the **infrastructure-traffic system**. Its main tasks also include transport "demand" and evaluation of the transportation system as a whole but as a sub-system as well (i.e per transport mode).

Some of **Sector's B** objectives are:

- Development and management of the transportation planning in national and regional level
- Transport infrastructure network planning
- Data collection, maintenance and analysis regarding the transportation system
- ICT – Information Communication Technologies in transport
- ICT – Information Communication Technologies in transport regarding the infrastructure : «smart» infrastructure («smart ways»)
- Transport policy maters
- Transportation systems organizational and operational maters
- Transportation projects' and systems' economotechnical evaluation
- Transport safety (policy formulation, statistical data, infrastructure improvement)
- Environmental and energy impacts of the transportation systems

The remaining bureaus supporting the Institute's activities are those concerned with:

- Staff Education & Training;
- H.I.T. Publications;
- Authoring standards and model processes for Transport in Greece, and
- Library.

The Director of the Hellenic Institute of Transport is supported by:

- the Scientific Council, whose operation is provided for by law and which is primarily a strategic body for science policymaking;
- a Deputy Director appointed by CE.R.T.H.'s Board upon the Director's recommendation; and
- three Bureaus, one each for International Relations Liaison, Quality Control (of the Institute's Departments) and Statistics, the latter also responsible for in-house statistics on the scientific staff's performance.

H.I.T. Management

The Institute is managed by its **Director** (or, when required, the Deputy Director). Specifically, the Director is responsible for creating the Institute's research and development programme, executing the CE.R.T.H. Board of Directors' decisions, appointing staff and, generally, staff status and disciplinary matters, preparing the budget, annual report and balance statement, and presenting these to the Scientific Council, and finally for all other matters pertaining to the Institute's management and operations.

The Director is elected following an open call for candidates for the post, assessment thereof by an 11-member committee set by the GSRT following the National Council's for Research and Technology (Greek: ESET) reccommendation. He/she is formally appointed for a five-year period by decision of the appropriate Minister and in accordance with the procedure desribed in Law no. 1514/85, article 11, paragraphs 3, 4 and 5. This procedure was first enacted in 2003 and repeated in 2008. Prof. G. Giannopoulos has been H.I.T.'s Director since the Institute started off (by appointment at first, and re-elected both times on the above-mentioned dates).

In case of post vacancy, Director absence or inability, the Director's duties are perfomed by the Deputy Director, appointed by CE.R.T.H.'s Board and qualified to Institute Researcher Grade A* as a minimum. Prof. Ath. Ziliaskopoulos of the University of Thessaly was HIT's Deputy Director for 2009.

The **Institute's Scientific Council** (Greek: ESI) has as members at least five scientists who must be Institute Researchers Grade A or B, or lower in seniority only in case of insufficient Grade A or B Researchers. ESI members are elected by secret ballot among all Institute Researchers. According to the law, the Scientific Council is responsible for approving the Institute's budget, annual report and balance statement presented by the Director, advising on scientific policy matters and Institute objectives, and assisting the Director in discharging his/her responsibilities, particularly in creating the Institute's research and development programme, monitoring that programme and reporting on it to the Minister for Development as dictated by law.

* *Equivalent to Principal Researcher. (translator's note)*

As of 2008, by decision of HIT Director Prof. G. Giannopoulos, all H.I.T. Researchers or Special Operational Scientists (Greek: ELE), regardless Grade, are members of the ESI/HIT. In addition, all sub-sectors' responsilbes are invited to and attend ESI meetings, without the right to vote.

According to the above, the members of HIT's Scientific Council for 2009 were:

- Prof. G. Giannopoulos, Director;
- Prof. Ath. Ziliaskopoulos, Deputy Director;
- Dr. E. Bekiaris, Researcher A;
- Dr. Maria Boile, Researcher A;
- Dr. Georgia Aifadopoulou, Researcher B;
- Dr. Ioannis Tyrinopoulos, Researcher C;
- Dr. Mary Panou, Researcher C;
- Dr Ioannis Pavlis, Researcher D;
- Dr. M. Morfoulaki, ELE B'.

Human Resources in 2009

In 2009, H.I.T. employed:

- Elected research staff (Researchers at Grades A, B, C and D);
- Management and technical scientists on fixed-term contracts;
- External scientists or experts on a project contract basis.

Staff in the former two groups, together with selected key contractors for 2009, are listed below:

A. Management - Researchers

- Prof. G. Giannopoulos, Civil & Transport Engineer, H.I.T. Director
- Ass't Prof. A. Ziliaskopoulos, Civil & Transport Engineer, H.I.T. Deputy Director
- Dr. E. Bekiaris, Mechanical Engineer, Researcher A
- Dr. Maria Boile, Civil & Transport Engineer, Researcher A.
- Dr. G. Aifadopoulou, Civil & Transport Engineer, Researcher B.
- Dr. G. Tyrinopoulos, Transport Engineer, Researcher C.
- Dr. M. Morfoulaki, Civil & Transport Engineer, Special Operational Scientist (ELE) B.
- Dr. M. Panou, Computer & Electronics Engineer, Researcher C.
- Dr. I. Pavlis, Production Engineering & Management, Researcher D.
- Dr. M. Boile, Civil & Transport Engineer, Researcher A.

B. TECHNICAL AND MANAGEMENT SCIENTIFIC STAFF (in alphabetical order)

- K. Agnantis, Computer Programming
- M. Vayou, Chemical Engineer, MSc Operations Management
- M. B. Vasilantonakis, BEng in Control & Computer Systems Engineering, MSc in Computer Systems & Networking
- O. Vlachou, BA in Geography
- E. Gagatsi, Civil Engineer, MSc in Transport Engineering
- E. Gaitanidou, Civil Engineer, MSc in Transport Engineering
- P. Georgopoulos, MSc in Mechanical Engineering
- O. Gaitatzi, Electrical and Computer Engineer
- M. Gemou, Mechanical and Aeronautics Engineer, PhD candidate in Aristotle University of Thessaloniki
- I. Damousis, Electrical Engineer
- St. Dimopoulou, Lawyer
- K. Kalogirou, BSc in Software Engineering, MSc in Digital Signal Processing and Communication Systems
- E. Kesidou, Electrical and Computer Engineer

- A. Kortsari, Civil Engineer, MBA
- I. Mantadis, BA in Economics
- D. Margaritis, Automotive Engineer
- E. Mitsakis, Civil Engineer
- A. Mourouzis, BSc in Software Engineering
- St. Nikolaou, Software Developer
- V. Papadimitropoulou, Business Management
- A. Papanikolaou, Civil Engineer, MSc in Transport Engineering
- E. Portouli, Mechanical Engineer
- P. Spanidis, BSc in Sofware Engineering, MSc in IT and Data Communications
- P. Tzenos, Software Engineer
- Aik. Touliou, BA in Psychology
- T. Tsaprounis, Mathematician – MSc in Information Technology
- A. Tsioutras, Civil Engineer, MSc in Environmental Studies & Transport Engineering
- E. Chalkia, Civil Engineer, MSc in Transport Engineering
- G. Charalampous, Civil Engineer, MSc in Transport Engineering
- E. Chrysochoou, Mathematician, MSc in Statistics & Operational Research
- J. Salanova Grau, Civil Engineer, MSc in Transport Engineering

C. SECRETARIAL STAFF (in alphabetical order)

- S. Argyrakou, Volos Branch Secretary
- M. Karatza, Athens (Alimou) Branch Secretary
- A. Kostouli, Project Sector A Secretary (Thessaloniki)
- G. Sigala, Athens (Mesogeion) Branch Secretary
- A. Christodoulou, Management Secretary / Project Sector B Secretary (Thessaloniki).

In addition to the above, 23 scientists were also employed as project contractors during 2009 (including 3 academic staff from other Greek Universities).

In total, H.I.T.'s scientific staff for 2009 numbered 64 people, regardless of contract type.

Figure 4:
The new HIT building.

Premises

The new-built H.I.T. headquarters are located within the Thessaloniki Technology Park on the 6th km Charilaou-Thermi Rd.

The new premises comprise offices of a total surface area of approximately $2500m^2$, along with underground state-of-the-art laboratories of a surface area of 1000m2, while the eventual long-term objective involves the acquisition of the necessary outdoor space of a surface area of approximately $6000m^2$, with the intention of developing facilities regarding traffic simulation, and control of the manufacture materials used for transport infrastructures.

Mobile Lab for Environmental and Traffic Measurement

H.I.T., in order to promote transportation / environmental research in Greece and to support the relevant authorities, has created a Mobile Lab for Environmental and Traffic Measurements. It has been financially supported by PEP of Central Macedonia and by the support program for Competitiveness of EPAN, in the framework of the initiative for “Excellence within the technological research”. The Lab has the goal to provide the tools for collecting and analyzing data, which will assist actions for the reduction of environmental pollution and traffic related problems

The Mobile Lab includes a number of scientific environmental and traffic measurement instruments, as well as the proper supportive equipment. More specifically:

- A static base which carries HORIBA CO, SO_2, NO, NO_2, O_3 & NO_x analysts on air, a sampling and a calibration HORIBA system.
- Air humidity and temperature measurement sensor.
- Wind-gauge and wind-vane sensor.
- Road profile recording georadar of high quality and analysis, with a 900MHz sensor.
- Traffic parameters measurement sensors and traffic volume measurement radar.
- Digital noise measurement instrument Class 1 IEC 61672.
- Processing and tele-transmission system for the data collected by the environmental instruments and traffic measurements.
- Power supply generator of alternative current (measurements can be done during Lab motion)

The Lab can perform the following:

- Gas emission – pollution measurements.
- Weather condition measurements (temperature, humidity, wind direction and speed).
- Sub-surface profile plotting.
- Traffic parameters registration and traffic volume measurements.
- Noise measurements.

H.I.T. Portal: Data Management and Process

The H.I.T. Portal **(www.imet.gr/komvos)** is a web based portal which provides Transport Data Management and Process services, supporting thus the Transport Research Community in Greece.

The H.I.T. Portal, currently hosted by the Hellenic Institute of Transport, addresses identified gaps in the collection and administering of data vital to the modern management of Transportation Systems, listed below:

- Fragmented and not sufficiently up-to-date information on the development and management of transportation systems in the country.
- Lack of knowledge and skill in the use of specialized Information and Communication Technologies (ICT) tools for the planning, management and control of Traffic and Transportation Systems by the relevant authorities.
- Slow adaptation to and adoption of innovative solutions and research results by the transportation sector.

The HITPortal, manages raw and ICT processed data to offer the following services to the users:

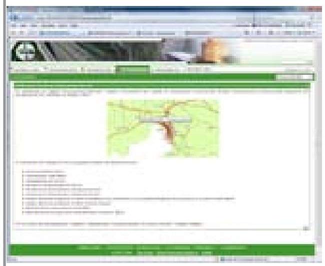
- Observatory
- Routing
- Transport planning and simulation tools
- Infomobility Centre
- Innovation Incubation
- Test Platform

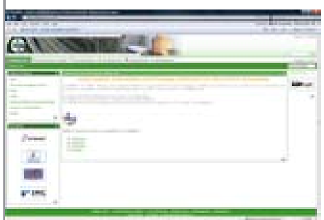
The H.I.T. Portal, is installed on hi-tech hardware including Powerful Servers, Distributed Systems, Desktop and Mobile Workstations, Mobile Phones, Palmtops, GPS Receivers. Data and applications are protected with the aid of critical modern network security procedures.

The equipment run under the Windows and Linux operating systems, with each workstation being dedicated to a specific operational task, using the relevant set of specialized ICT tools to process raw data in order to provide the users with the requested information or specific service.

The H.I.T. Portal, uses state-of-the-art databases to store and distribute the traffic and transportation data. These databases are organized, depending on the data they manage, either by service function or by type of data and, when required, they interface with other database services such as the GIS server and the Web server.

The server systems and applications administration is performed by expert server and network administration tools and is under constant scrutiny so as to ensure satisfactory and uninterrupted operation of both systems and applications.





MobiNET – Mobility Center Network

In the context of the European project «MobiNET - Mobility Center Network», H.I.T. has designed, developed and hosts the on-line services of the first Mobility Center Network in Greece, which operates in the Municipality of Kalamaria. The services developed include:

- Information on stops, time-schedules and itineraries of the municipal public transport service of Kalamaria
- Information on time-schedules and itineraries for KTEL (suburban public transport)
- Combined guidance with public transport from/to each direction, stop or other point of interest
- Information on points of interest via web GIS
- Information on mobility impaired persons’ trips
- Information on ticket prices
- Information on ticket selling counters
- On-line communication and complaint form

The Center’s e-services are hosted by the H.I.T. PORTAL infrastructures.

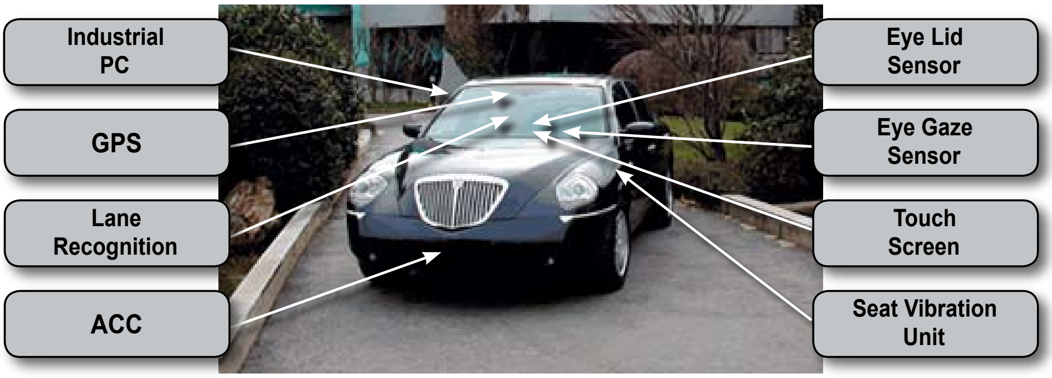
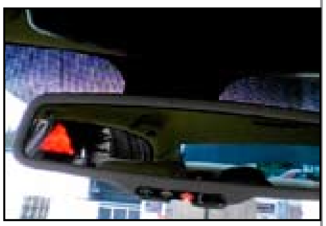


Figure 6: Overview of the research vehicle for driving behaviour.

Research Vehicle for Driving Behaviour

The touch screen.



The central mirror.

The eyelid sensor.

Within the framework of the operational programme COMPETITIVENESS of the Ministry of Development, Measure 3.3, Action line 3.3.1, Act 3.3.1.2 “Excellence in Research and Technological Organizations supervised by the Greek General Secretariat for Research and Development” a Centre of Excellence on driving behavior issues was created within the Hellenic Institute of Transport. The Centre is equipped with a research vehicle able to record and analyze on-line driving behavioral parameters as well as able to simulate advanced driving assistance systems, a semi-dynamic driving simulator and a virtual reality system with software specific for transport applications.

The research vehicle is a Lancia Thesis 2.4 20V Emblema model. It is equipped as follows:

- Front obstacle detection radar, providing information about front obstacles (distance, relative speed).
- Lane recognition camera, providing information about vehicle position relevant to the lane.
- GPS.
- Eyelid sensor and software, providing information regarding eyelid movements, which are useful to estimate level of driver’s hypovigilance.
- Eye gaze sensor and software, providing information on the focus of attention of the driver at each specific time moment.
- Electronic unit, which collects information from the vehicle electronic system and exports them to the central PC for processing. Such information include: acceleration pedal position, brake cylinder pressure, vehicle longitudinal speed and acceleration, yaw rate, steering wheel angle, lights status, wipers status, external temperature, etc.
- Main PC to record and store all information as well as on-line process it.
- Touch screen integrated in the vehicle dashboard driven by the main PC, so as to provide warnings to the driver.
- Special warning lights integrated in the central mirror and seat vibration unit, both driven by the main PC so as to provide adequate warnings to the driver.

Using the systems of this research vehicle, the functionalities of several advanced driving assistance systems can be simulated as well as their HMI. In this way, it is possible to perform ergonomic studies for such systems as well as studies on user acceptance. Furthermore, the driving behavior can be analyzed in detail and safety studies regarding vehicle and road interventions can be conducted.

Mobile Driving Simulator under the influence of alcohol abuse

Overview of the research mini-van

Within the framework of BOB-Campaign in Greece (Alcohol - Not Tonight - I am Driving), H.I.T. has also equipped a mini-van with a «drunk driving» simulator, the combination of which will demonstrate the direct negative drawbacks of driving under the influence of alcohol, allowing HIT to promote systematically a pioneering, for the Greek standards, educational campaign.

Virtual Reality System

CE.R.T.H./H.I.T. possesses a Virtual Reality System, which is in fact a single wall cave system, and is generally intended for the realization of designing, performing structural studies, and ergonomic or other safety assessment analyses that require the simulation of a series of various procedures. Towards the achievement of such goals, the use of the software package “Virtual Anthropos” and its subsystems are required.

For the implementation of the above research scopes, the VR system has adapted a number of software tools, which give the potential for the visualization and manipulation of 2D and 3D CAD files in immersive environment, which includes cuts, disassemblies, measurements, rotations, lightning, etc. in real time. This application framework may prove to be useful for engineers during the phase of design and revision and moreover for the products marketing and exploitation, by means of their demonstration.

By means of the use of human models and their multiple parameterizations, there is also the potential for Human Factor and Risk Analyses, before the final physical product is to be produced and commercially exploited. It is a cost-effective and flexible tool, aiming at the qualitative product advancement.

There are a lot of software tools that could be adapted in the H.I.T. VR system aiming at the implementation of more complex and sophisticated analyses, whereas the potentials for the system advancement to a three, four, five or six walls system (VR cave) is considered as a foreseen and feasible perspective within near future.

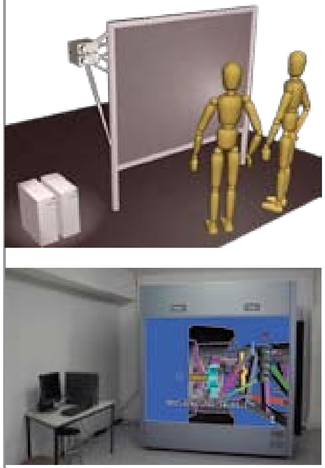


Figure 7: General overview of the H.I.T. virtual reality system.

Driving Simulator

The H.I.T. driving simulator is built around a Smart cabin equipped with sensors. The position of all control levers, windshield wipers, blinker, ignition key and light switch is transmitted to the driving computer. All operational elements, steering wheel, accelerator pedal, brake pedal, gearshift lever and handbrake lever, provide nature-true force reactions. The gearshift functions like in the real car either as automatic or “softtip” with incrementing and decrementing the six gears and with reverse gear.

The sight system includes five large-screens, each having a width of 2m. There is on-screen projection with consumer video projectors with 2500 ANSI-lumen. The sound system generates original sounds according to the situation (starter, engine noise, horn, screeching of tires, drive wind, rain, etc.). The vibration device creates nature true vibrations of the car according to the revolvation of the simulated engine.

General overview of the driving simulator.

The simulator is equipped with specialized software which allows the development of special driving scenarios, according to the purposes of each study. There is surrounding traffic with at the most 30 road users with artificial intelligence, comprising passenger cars, trucks, pedestrians and cyclists. They observe the traffic rules, the distance from the foregoing vehicle and observe the speed limits, come to a stop before red lights and crossing traffic, accelerate and decelerate in a natural way and may be passed. For traffic education and training the behavior patterns may be modified, so that aggressive, very slow, unskilled or drunken drivers may be simulated.

The software includes various courses (standard course, hill course, round course, roadnet, highway), sight- and road surface conditions (nice weather, fog, rain, snow, night) and various modes (i.e. driving under various alcohol consumption rates). There are also specific software modules related to elderly drivers’ behavior assessment.

Driver’s field of view.

The simulator is adequate to study dangerous situations, which would not be safe to test on real traffic conditions, like for example overtaking, driving under the influence of alcohol, etc.

Motorbike Simulator

This is a dynamic simulator with five degrees of freedom (roll, pitch, yaw, neck expansion and contraction and driving bar) on a platform that allows a maximum pitch of 15o for safety reasons. In addition to the actuation system, the simulator platform is totally instrumented. Rider’s inputs controls are equipped with adequate sensors (throttle, brake, clutch, gearbox, etc). All data of the above units are recorded for further analysis after the experiment.

The motorbike simulator helps to the development of new algorithms and “smart” software which aim to the safety of the rider and also to the experimental measurement of the acceptance of newly produced systems before their adjustment on real motorbikes. Another research subject is the measurement of the reaction of the rider during an incident and/or during control of a number of different aspects.

Research Vehicles

HIT's main vehicle research equipment is a number of clean vehicles that are used to serve Institute's research needs; namely to survey the impacts on the wide public from the introduction of clean vehicles in the urban traffic. These vehicles are described below.

Electrically Assisted Bicycles

Figure 8: The electrically assisted bicycles.

The electrically assisted bicycles are used so as to assist the rider in propulsion. Each bicycle weights approximately 38.5 kg and can carry up to 80 kg. The maximum speed is 20 km/h and the maximum driving range is 35-50 km.

Hybrid Vehicle Toyota Prius

The hybrid vehicle TOYOTA PRIUS is being used – in parallel to the electric two-wheelers – in surveys regarding technologies of clean vehicles as well as for drivers' pilot training.

A special recording device was installed on the vehicle, which stores data regarding fuel consumption and driving behavior. This data can be sent via GPS to a center for monitoring and consulting purposes. The vehicle was also equipped with a wireless smart card reader. This smart card is used so as to activate the automatic operation of the entrance bar to a dedicated parking place.

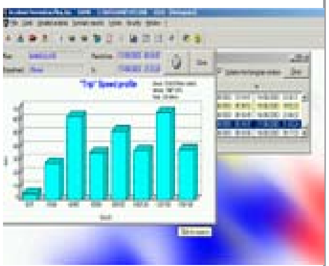


Figure 11: Analysis of driving data.

Figure 10: HIT's hybrid vehicle.

Figure 12: System recording driving and consumption data.

Electrical Mopeds

Figure 9: Electrical moped during charging.

The electrical moped EVT combines high technology with environment protection, easi-ness of use, smooth acceleration and portable charges. It includes a motor on the wheel for greater efficiency and reduced power consumption, a smart digital controller, over-heating protection systems and two modes of operation (economy and reinforced), energy level LEDs and negligible noise.

Motorcycle Test Vehicle

This is the first hybrid motorcycle model ever produced. It is a Piaggio MP3 Hybrid, which is equipped with obstacle identification/leading vehicle radar and a gyroscope for measuring the leaning angle & the acceleration in the three axles of motion. The motorcycle is also equipped with a Global Positioning System (GPS), combined with an information module which keeps the rider updated regarding the weather conditions or high risk locations. The rider is informed with visual, acoustic and haptic warnings.

This vehicle aims at the development of new algorithms and "smart" software, which will enhance the safety of the rider, and also aims at the experimental measurement of the acceptance of newly produced systems before their introduction to the market models. Another research subject is to monitor the reaction of the rider during an incident and/or during multitasking situations.

SCIENTIFIC WORK

Research Projects

An overview of H.I.T.'s scientific work in 2009 is presented in Table 1. During 2009, H.I.T. had 45 active projects, 17 of which were initiated in 2009 and the remaining 28 have been progressing since prior to 2009.

Also in 2009, 25 proposals were submitted, 11 of which have been accepted to date. Finally, 12 ongoing projects will end in 2010.

TABLE 1: Overview of 2009 project activity

OVERVIEW OF HIT'S 2009 PROJECTS	
ACTIVE PROJECTS IN 2009	50
PROJECTS INITIATED IN 2009	20
PROJECTS INITIATED BETWEEN 2006-2009	49
SUBMITTED PROJECT PROPOSALS IN 2009	32
ACCEPTED PROPOSALS IN 2009	11
PROJECTS TO END IN 2010	12

H.I.T.'s full active project breakdown is presented in Table 2 below.

TABLE 2: Active projects in 2009

ACTIVE PROJECTS IN 2009							
NO.	PROJECT MNEMONIC	PROGRAMME / CONTRACT NO.	PROJECT TITLE	LEAD SCIENTIST	HIT BUDGET (in Euros)	START DATE - END DATE	HIT'S ROLE
1.	**HILAS**	EU	Human integration into the Lifecycle of Aviation Systems	E. Bekiaris	126,901	1/6/2005 31/5/2009	PARTNER
2.	**VIRTHUALIS**	EU	Virtual Reality and Human Factors Applications in Improving Safety	E. Bekiaris	433,560	1/5/2005 30/4/2009	PARTNER
3.	**SAFESPOT**	EU	Cooperative systems for road safety "Smart Vehicles on Smart Roads"	G. Aifadopoulou	200,845	1/1/2006 31/12/2009	PARTNER
4.	**GOODROUTE**	EU	Dangerous Goods Transportation Routing, Monitoring and Enforcement	E. Bekiaris	682,430	1/1/2006 31/01/2009	COORDINATOR
5.	**HIT PORTAL**	General Secretariat for Research and Technology	Support infrastructure for transport research: CERTH/HIT's data management and processing Portal	G. Aifadopoulou	1,275,039	1/10/2005 30/6/2009	MAIN CONTRACTOR

NO.	PROJECT MNEMONIC	PROGRAMME / CONTRACT NO.	PROJECT TITLE	LEAD SCIENTIST	HIT BUDGET (in Euros)	START DATE - END DATE	HIT'S ROLE
6.	**KTEL CHALKIDIKIS**	Ministry for Transport	Accessibility review and report for the new Chalkidiki Intercity Coaches (KTEL) East Thessaloniki terminal station	G. Aifadopoulou	37,815	1/08/2008 31/03/2009	MAIN CONTRACTOR
7.	**PROMIT**	EU	Promoting Innovative Intermodal Freight Transport	I. Tyrinopoulos	245,824	1/3/2006 28/2/2009	PARTNER
8.	**CATER**	EU	Computerized Automotive Technology Reconfiguration System	E. Bekiaris	517,069	1/9/2006 31/8/2009	PARTNER
9.	**TrainAll**	SUSTDEV-FP6	An integrated system for driver training and assessment using interactive training tools and new training programmes for all types of road transport	E. Bekiaris	312,619	1/11/2006 31/10/2009	COORDINATOR
10.	**FREIGHTWISE**	EU	Management framework for Intelligent Intermodal Transport	G. Giannopoulos	272,052	1/11/2006 30/4/2010	PARTNER
11.	**LIMES**	EU	Reinforcing security in Europe by integrated monitoring of coastal areas	G. Aifadopoulou	28,300	1/12/2006 31/5/2010	PARTNER
12.	**Information campaign**		Public awareness campaign for road safety	E. Bekiaris		14/12/2006 31/12/2009	
13.	**IN MOSION**	SSP FP6	Science Shop for Innovative Mobility Solutions for Mobility Challenged Europeans	G. Aifadopoulou	50,000	1/1/2007 30/6/2009	PARTNER
14.	**DRUID**	EC FP 6	Driving under the Influence of Drugs, Alcohol and Medicine	E. Bekiaris	431,834	15/10/2006 14/10/2010	PARTNER
15.	**PERSONA**	ANKO S.A.	PERceptive Spaces prOmoting iNdependent Aging «PERSONA»	E. Bekiaris	20,000	2/4/2007 31/5/2010	SUBCONTRACTOR
16.	**Koinonia tis Pliroforias (Information Society)**	Institute for Technology & Research	Access for Disabled Persons to «Information Society's» e-Government services	E. Bekiaris	90,000	6/7/2007 5/1/2009	SUBCONTRACTOR
17.	**MobineT**	Anatoliki S.A.	Project team support for the set-up and operation of a pilot mobility centre in the City of Kalamaria, as part of the IIE-Mobine project	I. Tyrinopoulos	15,000	1/12/2007 30/6/2009	SUBCONTRACTOR
18.	**KOMODA**	FP 7	Co-modality Towards optimised integrated chains in freight transport logistics	G. Aifadopoulou	129,800	1/1/2008 31/12/2009	PARTNER
19.	**OASIS**	FP 7	Open Architecture for Accessible Services Integration and Standardisation	E. Bekiaris	854,898	1/1/2008 31/12/2010	PARTNER
20.	**Saferider**	FP 7	Advanced Telematics for enhancing the safety and comfort of motorcycle riders	E. Bekiaris	424,000	1/1/2008 31/12/2010	COORDINATOR
21.	**METRONOME**	FP 7	An Evaluation methodology for the FP projects' impact in the field of transport	I. Tyrinopoulos	53,466	1/2/2008 31/7/2009	PARTNER

NO.	PROJECT MNEMONIC	PROGRAMME / CONTRACT NO.	PROJECT TITLE	LEAD SCIENTIST	HIT BUDGET (in Euros)	START DATE - END DATE	HIT'S ROLE
22.	**iTravel**	FP 7	Service Platform for the Connected Traveller	I. Tyrinopoulos	29,976	1/1/2008 30/6/2009	PARTNER
23.	**ACTIBIO**	7 F.P. - Specific Targeted Research and Innovation Project (STRIP)	Unobtrusive authentication using activity related and soft biometrics / 215372	E. Bekiaris	260,000	1/3/2008 28/2/2011	COORDINATOR
24.	**SHLOW**	FP7 SSA	Show me How Slow	G. Giannopoulos	29,460	1/3/2008 28/2/2010	PARTNER
25.	**AEGIS**	7 F.P. - Integrated Project (IP)	Open Accessibility Eve-rywhere: Groundwork, Infrastructure, Standards	E. Bekiaris	1,538,136	1/6/2008 31/12/2011	COORDINATOR
26.	**TELEFOT**	7 F.P. - Integrated Project (IP)	Field Operational Tests of Aftermarket and Nomadic Devices in Vehicles	E. Bekiaris	455,000	1/6/2008 31/5/2012	PARTNER
27.	**FERSI**			E. Bekiaris	200,700	1/6/2008 31/5/2011	
28.	**SMART CM**	FP 7 IP	SMART Container Chain Management	G. Aifadopoulou	700,147	1/8/2008 31/7/2011	COORDINATOR
29.	**MARPOS**	FP 7 Support Action	Maritime Policy Support	I. Tyrinopoulos	170,088	1/12/2008 31/5/2010	COORDINATOR
30.	**ACCESS2ALL**	7 F.P. - Coordina-tion Action (CA)	Mobility Schemes Ensur-ing Accessibility of Public Transport for All Users	E. Bekiaris	160,645	1/12/2008 30/11/2010	PARTNER
31.	**ACCESSIBLE**	7 F.P. - Specific Targeted Research and Innovation Project (STRIP)	ACCESSIBLE-Accessibil-ity Assessment Simula-tion Environment for New Applications Design and Development	E. Bekiaris	372,000	1/9/2008 31/8/2011	PARTNER
32.	**DELTA**	EC- DG RTD Coordination Action (CA)	Concerted coordination for the promotion of efficient multimodal interfaces	I. Tyrinopoulos	190,867	1/1/2009 31/12/2010	COORDINATOR
33.	**SAVE ME**	KOI: 7 F.P. - Specific Targeted Research and Innovation Project (STRIP)	System and actions for Vehicles and transportation	E. Bekiaris	520,834	1/1/2009 31/12/2011	PARTNER
34.	**2-BE-SAFE**	STRIP	2-wheeler behaviour and safety	E. Bekiaris	287,421	1/1/2009 31/12/2011	PARTNER
35.		Ministry of Commu-nication and Works, Cyprus	Integrated Mobility Master Plan of Nicosia	G. Aifadopoulou	128,652	4/2/2009 3/10/2009	SUBCONTRACTOR
36.		Prefecture of Volos	Evaluation of "Keramidi-Veneto-Pouri" preliminary interurban road design study and its environmental impacts	N. Eliou	30,000	21/4/2009 31/7/2009	SUBCONTRACTOR
37.	**FREILOT**	ICT Policy Support Programme (ICT PSP)	URBAN FREIGHT EN-ERGY EFFICIENCY PILOT	G. Aifadopoulou	118,818	1/4/2009 30/9/2011	PARTNER

NO.	PROJECT MNEMONIC	PROGRAMME / CONTRACT NO.	PROJECT TITLE	LEAD SCIENTIST	HIT BUDGET (in Euros)	START DATE - END DATE	HIT'S ROLE
38.	**PROLOGUE**	7 F.P. - Collaborative Project (CP)	Promoting real life Observations for Gaining Understanding of road behaviour in Europe	E. Bekiaris	214,269	1/5/2009 30/4/2011	PARTNER
39.	**2DECIDE**	Toolkit for sustainable decision making in ITS deployment_2decide	Toolkit for sustainable decision making in ITS deployment_2decide	E. Bekiaris	44,034	1/10/2009 31/11/2011	PARTNER
40.	**ENABLE**	KOI: 7 F.P. - Coordination and Support Action (CSA)	Stimulate Sustainable Freight Transport Systems with Latin American Countries	I. Tyrinopoulos	134,178	1/9/2009 31/8/2011	COORDINATOR
41.	**VIAJEO**	7 F.P. - Collaborative Project (CP)	International demonstrations of platform for transport planning and travel information	I. Tyrinopoulos	258,274	1/9/2009 31/8/2012	PARTNER
42.	**SAFEWAY-2SCHOOL**	7 F.P. - Collaborative Project (CP)	Integrated system for safe transportation of children to school	E. Bekiaris	330,000	1/9/2009	31/8/2012
43.		SASTH – Municipality of Kalamaria –Anatoliki S.A.	Operation of the Mobility Center Network	G. Aifadopoulou	12,000	6/7/2009 30/6/2010	SUBCONTRACTOR
44.	**BACK-GROUNDS**	Interreg med	BACKGROUNDS	G. Aifadopoulou	222,116	1/6/2009 31/5/2012	PARTNER
45.		Ministry of Transport	Technical consultant to the Ministry of Transport and Telecommunications for the implementation of the Thessaloniki Public Transport Master Plan	G. Giannopoulos	70,000	18/8/2009 17/11/2009	SUBCONTRACTOR
46.	**Weather**	7 F.P. - Collaborative Project (CP)	Weather Extremes: Assessment of Impacts on Transport Systems and Hazards for European Regions	G. Aifadopoulou	352,999	1/11/2009 30/4/2012	PARTNER
47.	**REMOTE**		Remote health and social care for independent living of isolated elderly with chronic conditions	E. Bekiaris	286,318	1/4/2009 31/3/2012	PARTNER
48.	**MLS Multimedia**	MLS Multimedia S.A.	Provision of special services – inspection and analysis of certain traffic data		G. Aifadopoulou	30,000	26/11/2009 31/3/2010
49.	**EOX (EEA)**	European Economic Area (EEA)	Intelligent urban mobility management and traffic control system for the improvement of the urban environment quality in the central area of Thessaloniki's agglomeration	G. Aifadopoulou	722,771	24/4/2009 30/4/2011	PARTNER
50.	**FERSI SEMINAR**	FERSI	FERSI Training Seminar in Thessaloniki entitled 'Simulator-based training and research'	E. Bekiaris	9,000	28/5/2009 15/1/2010	

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43. Baldanzini N., Bencini N., Pierini M., Delhaye A., Montanari R., **Bekiaris E.,** "Riders' Needs and Wants: The SAFERIDER approach", 16th World Congress on Intelligent Transport Systems, September 21-25, 2009, Stockholm, Sweden.
44. Diederichs J.P. F., Fontana M., Bencini G., Widlroither H., **Nikolaou S.,** Montanari R., Baldanzini N., "HMI Elemente und Konzept für Motorrad Assistenzsysteme in SAFERIDER", Berliner Werkstatt Mensch-Maschine-Systeme, 7-9 October, 2009, Berlin, Germany.
45. Van Isacker K., Goranova-Valkova M., Tsakou G., **Chalkia E., Touliou K.,** "Brain and skills training applications in a game-based environment for older people", 2009 conference «Interactive Technologies and Games: Education, Health and Disability».
46. Anund A., Renner L., Dukic T., **Nikolaou S., Chalkia E., Bekiaris E.,** "Integrated system for safe transportation of children to school "SAFEWAY2SCHOOL", RS4C 2010 Road Safety on Four Continents 22–24 March 2010, Abu Dhabi, the United Arab Emirates.
47. Mavridou E., Tzovaras D., **Bekiaris E., Gemou M.,** Hassapis G., «A Data Mining Framework for Citarasa-based system», expected in proceedings of KEER 2010, 2nd-4th March 2010, Paris, France.
48. **Bekiaris E., Spanidis P., Gemou M.,** «Intelligent Agents for Personalised Vehicle Configuration», expected in proceedings of KEER 2010, 2nd-4th March 2010, Paris, France.
49. **Bekiaris E., Gemou M.,** Kalogirou K., "Embedded User Interface for web, mobile and desktop applications to satisfy Design for All principles", Article for book «User Interfaces», ISBN 978-953-7619-X-X, approved; to be published by IN-TECH within 2010.

Note: HIT staff in **bold**.

EDUCATIONAL WORK

H.I.T.'s Involvement in the «Planning, Organising and Managing Transportation Systems» Postgraduate Studies Programme

The areas of Planning, Organising and Managing Transportation Systems on a local, regional, national and supranational scale are of high priority for Greece. This is why H.I.T., with the Aristotle University of Thessaloniki (AUTh) Schools of Civil Engineering and Rural & Survey Engineering, jointly run the **Cross-discipline postgraduate programme of study (Greek: DPMS) titled "Planning, Organising and Managing Transportation Systems".** The aim is to maintain a programme of study of a high standard, European in philosophy and international in outlook, with the involvement of renowned and acclaimed Institutions of Transport Education based in Greece and abroad.

For more information, you can visit **http://civil.auth.gr/pgtransport**

FINANCIAL REPORT FOR 2009

In 2009, the Hellenic Institute of Transport continued its activities in terms of European and National Research Programs and also in terms of services provision to private and public Institutions.

The main financial indicators for the Institute's activity in 2009 are listed in Table 3 below and are also presented graphically on Figure 13.

TABLE 3: H.I.T.'s finances, 2009

FINANCIAL REPORT 2009	
SOURCES OF REVENUE	**2009**
Ongoing Projects (number of)	45
Revenue from European Union funded research projects	2.191.115,06
Revenue from GSRT funded research projects	418.252,53
2009 National Budget allowance	252.450,00
Revenue from Services	295.483,68
Other	124.332,74
Total Annual Revenue	3.281.634,01

From Table 3, it can be seen that H.I.T.'s biggest source of revenue for 2009 is European Union research projects (66%), with an additional 13% of total revenue from General Secretariat for Research and Technology research projects. As for revenue from Services and the National Budget, their share for 2009 is 9% and 8% respectively.

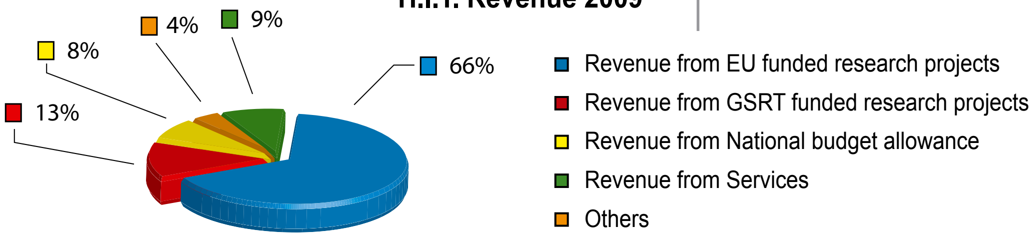

Figure 13: H.I.T.'s income distribution by source.

Perhaps the most notable conclusion drawn from this split of revenue is the very small share of the National Budget allowance (not higher than 8%).

«Services» projects, too, represent a very small percentage of total revenue (9%). These include projects assigned to H.I.T. by Ministries or other public or private organisations in Greece and abroad, although to date it almost exclusively comprises projects assigned to H.I.T. by Ministries. Therefore, the total Government contribution to H.I.T.'s revenue represents a fraction (less than 17%) of the total income, a fact that highlights the more significant inflows from the other sources of revenue.

Given most of the inflows come from successive proposals after purely competitive procedures, ie. passing technical evaluations, it is evident how highly competitive H.I.T. is on a European level.

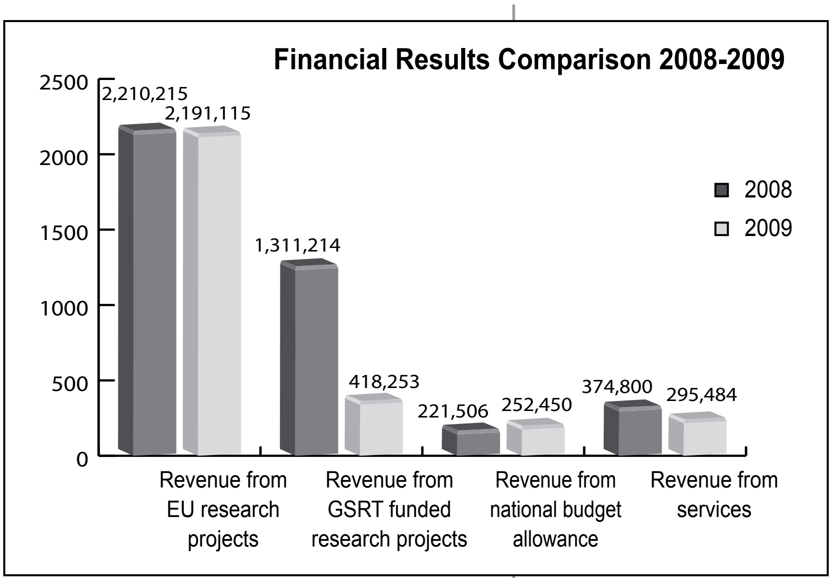

Figure 14: H.I.T.'s revenue year on year (2008-2009).

INTERNATIONAL PARTNERSHIPS AND PROMOTIONAL ACTIVITIES

International Partnerships

ECTRI – European Conference of Transport Research Institutes

In January 2003, the European Conference of Transport Research Institutes was founded as an international not-for-profit association under French law, based in Lyon, France. H.I.T. is a founding member of ECTRI.

More information can be found on the ECTRI website: **http://www.ectri.org.**

In January 2003, H.I.T.'s Director Prof. G. Giannopoulos was elected first ECTRI Chairman for the two-year period 2003-2005 and was then re-elected in March 2005 for the 2005-2007 period. In December 2008, following an international call for candidates and subsequent assessment thereof, H.I.T.'s Dr. E. Bekiaris (Researcher Grade A) was appointed editor-in-chief of the European Transport Research Review (ETRR) journal published by ECTRI in partnership with a major European publishing house.

SETREF – South East European Transport Research Forum

The South East European Transport Research Forum (SETREF) is an international non-governmental, not-for-profit association of South East Europe Transport research organisations. SETREF members are active in Transport research and/or education. It was founded in Thessaloniki in April 1997 and is hosted by H.I.T. in Greece.

Today, SETREF has 33 member Organisations, with most of which H.I.T. has close relations.

H.I.T. had held the SETREF presidency for seven years and currently holds the Forum's vice-presidency.

More information can be found on SETREF's website: **http://hermes.civil.auth.gr/setref.**

ERTICO – European Road Transport Telematics Implementation Co-ordination Organization

The European Road Transport Telematics Implementation Co-ordination Organization (ERTICO) is a not-for-profit organisation with private- and public-sector stakeholders. It was founded in 1991 on a joint initiative by the European Union and Member State governments. Its mission is the advancement and application of Intelligent Transport Systems and Services (ITS), to ensure sustainable mobility, quality of transportation and high margins. By joining ERTICO, member organisations can realise significant synergies across sectors and states, in order to develop a successful Europe-wide market for Intelligent Transport Systems.

In 2003, CE.R.T.H. became the first Greek ERTICO stakeholder with two of its Institutes, namely H.I.T. and the Informatics and Telematics Institute (Greek: IPTIL).

FERSI – Forum of European Road Safety Research Institutes

The Forum of European Road Safety Research Institutes (FERSI) was founded in 1991 as an association of the transport safety research institutions in most European countries.

H.I.T. joined FERSI in 2004.

Dr E. Bekiaris (H.I.T. Researcher Grade A) was elected FERSI chairman in 2008.

EUROPEAN ENVIRONMENT AGENCY

The Hellenic Institute of Transport has been European Environment Agency's National Focal Point for Greece since 2001. Specifically, HIT contributes to the process of commenting on data used to produce European environmental indicators evaluating the transport-environment interaction.

European Transport Research Review - ETRR

Advisory Board Member: Prof. G. Giannopoulos, Director, CE.R.T.H./H.I.T.
Editor-in-chief: Dr. E. Bekiaris, Research Director, CE.R.T.H./H.I.T.
Editorial Board Members: Dr. G. Aifadopoulou, Researcher B, CE.R.T.H./H.I.T.,
Dr. Maria Panou, Researcher C, CERTH/HIT

TOPICS

- Freight transport and logistics
- Mobility and transport behaviour
- Safety and security
- Transport and economics
- Transport and the environment
- Transport infrastructure
- Transport planning and policy
- Transport system management
- Vehicle technology

The *European Transport Research Review – An Open Access Journal (ETRR)* is an online scientific platform aiming at disseminating research results in the field of transport. The main scope and mission of the Journal is to provide a forum for the publication of high quality scientific papers in the field of transport in general, and a dissemination medium for new ideas and developments that originate in, or are of interest to, the European transport research community. The Journal was established by the European Conference of Transport Research Institutes (ECTRI).

There are three aspects of the Journal's concept that mark a distinct difference to the other journals in the field of transport; first, it is the open access configuration that makes it easily and widely available through the internet to all readers with a minimum of constraints and costs; second, it provides focus on issues of special interest to European transport research, its funding bodies and supervising organisations; third, it is clearly oriented towards both researchers and practitioners.

The Journal considers primarily papers, on both theoretical as well as applied research, whose excellence and content represent an important contribution to transport research in Europe. Papers dealing with theoretical or applied research outside Europe are also encouraged to be submitted for publication, as long as their results are of relevance to European transport concerns, or can contribute to scientific knowledge or best practice transfer between researchers in Europe and their counterparts in other continents.

Contributors are advised to submit papers that fit at least in one of the areas of interest identified by the Journal. However, the Editorial Board can also consider papers that are not directly related to these areas but are considered of interest of or particular concern to the aims and goals of the Journal. Papers published in the Journal are subjected to peer-review in accordance with standard international practices for scholarly journals. In addition, the Journal will also periodically publish information papers, as well as book and conference reviews regarding transport policy and research in Europe.

For more information please visit: www.springer.com/12544, ISSN:1867-0717.

Cooperations in Greece

In Greece, H.I.T. has a long-term stable cooperation with AUTh, and in particular with the Laboratories of Highway Engineering and Transport Engineering at the Department of Civil Enginering, as well as with the Transport Research Group of the Transport and Hydraulics Works Sector at the School of Rural & Survey Engineering. This partnership is primarily about HIT's share in organising and running the Cross-discipline Postgraduate Programme in Transport, which first admitted students in September 2003.

Also, H.I.T. collaborates systematically with the Hellenic Institute of Transportation Engineers (Greek: SES), jointly organising the biennial Conference for Transport Research in Greece. H.I.T. and SES also collaborate on many other conferences and events.

Finally, through the various studies and special research projects it undertakes, H.I.T. has worked and is working with all the major Transport players in Greece. For instance: the Ministry for Transport, the Ministry for the Aegean, the Ministry for Public Works, Planning & the Environment, the Region of Central Macedonia, the Greek Railways (Greek: OSE), the Athens Urban Transit Organisation (OASA), the Council for Thessaloniki's Urban Transit (SASTh), and the Thessaloniki Port Authority (OLTh).

Other Promotional and Public Awareness Activities

In promoting its work and raising public awareness of it, the Hellenic Institute of Transport organises each year conferences and seminars in areas within its scientific remit, takes part in related exhibitions and collaborates with scientific journals.

Also, H.I.T.'s views and positions as Greece's National Advisor on Transport are publicised through a multitude of interviews on the Media.

A detailed breakdown of 2009 promotional activities by the Institute is presented in the following sub-sections.

Inauguration of H.I.T.'s new-built offices

The Hellenic Institute of Transport (H.I.T.) celebrates 10 years of existence and inaugurates its new building in Thessaloniki

On Friday 29th January, 2010, H.I.T. celebrated in a special ceremony which was attended by more than 150 people and officials the 10th anniversary of its establishment along with the inauguration of the new offices in Thessaloniki, withing the Technology Park on the 6th km Charilaou-Thermi Rd. (CE. R.T.H. premises).

Mr. Theologitis, EU representative, was the keynote speaker of the event who spoke of the new EU transport policy points. Several officials from Greek Authorities also addressed the event.

The Director of H.I.T., Prof. Giannopoulos, focused on the milestones of the 10-year progress of H.I.T and thanked its personnel and everyone that contributed to this progress.

The event was followed by the inauguration of the new building by Mr. S. Vougias, Deputy Minister of Citizen Protection and Mrs. M. Lioni, Secretary General of the Region of Central Macedonia. The event concluded with the participation of the various institution representatives in the Round Table that focused on the great transportation problems of our country.

More detailed information and material on the event is included in the commemorative volume issued by H.I.T..

Organization of Conferences & Seminars

2nd European Conference on ICT for Transport Logistics (ECITL), Venice, Italy, 29-30 October 2009

The great success of the 1st conference held in 2008 led to its establishment and to this year's 2nd Conference organization.

The international event is coorganized by organizations managing EU research projects focusing on how new technologies can be integrated to provide value-added services in transport logistcs (FHV, Insiel, ISL Bremerhaven, BMT, SINTEF).

The target audience includes all stakeholders in the area of transport logistics, e.g. logistics operators, industry, infrastructure providers and authorities, but also researchers and experts

The topics of the conference included currently met and future challenges that need to be addressed such as transparency and support of the Supply Chains operation through new technologies, Smart Cargo, safety in Freight Transprots and possible impacts on the field.

"Freight transport and e-logistics: the implementation of Information and Communication Technologies (ICT) as a key co-modality (Co-modality) in the future"

The Hellenic Institute of Transport (H.I.T.) within the European research project KOMODA (Co-modality - towards optimised integrated chains in freight transport logistics) successfully organized the Conference of the final project on «Freight transport and e-logistics: the implementation of Information and Communication Technologies (ICT) as a key co-modality (Co-modality) in the future». The conference was held in Thessaloniki on November 26, 2009. The conference was attended among others by representatives from business and academia in the field of Transport, DG TREN, European Commission, representatives of other European organizations in the field of freight transport (European Intermodal Association (EIA), European Intermodal Research Advisory Council (EIRAC) etc.), logistics providers in the field of Freight and Logistics, students from the graduate program of A.U.Th. Transport.

Presentation: The KOMODA Action Plan: Tackling the barriers of ICT for the e-logistics platform, (G. Charalampous, H.I.T.).

Cooperation with Scientific Journals

As part of its communications policy and contribution to freight transport and logistics research and developoment, the Hellenic Institute of Transport has a permanent column in Supply Chain & Logistics (formerly: Warehouse & Transportation), a (Greek) magazine targeted at a broad audience in the freight transport and logistics market and industry. This column reflects HIT's positions and views on topical issues, whilst also publicising the Institute's research results.

During 2009, seven articles were published, namely:

- "eCall: Authorities' eCall system in case of an accident", January 2009.
- "Motorways of the Sea Master Plan in S.E. Mediterranean", March 2009.
- "Urgent need for the activation – reformation of the Greek railway domain", May 2009.
- "Towards a broader use of new technologies and 'intelligent transport systems' for e-logistics and freight transport improvement", July 2009.
- "The equipment costs as a barrier for the integration of new security related technologies in the global supply chains", September 2009.
- "Towards a European 'architecture' for freight transports: FREIGHTWISE project outcomes", November 2009.
- "The field of maritime transport has new meaning in the context of the new European maritime policy", December 2009.

Participation in Exhibitions and Events

In 2009, HIT participated in various exhibitions and events, where the wider public had the opportunity to become aware of the Institute's work and see its research equipment, mainly the driving simulator. Such events were:

- Cyprus International Trade Exhibition: Driving simulator at Cyprus Traffic Police Pavilion, 22-30 May, 2009.
- «Less blood on the roads, more blood donators», Cooperation with Radio Thessaloniki, 24 May 2009.
- Cooperation with the famous Greek singer George Tsalikis at the Mediterranean Cosmos with the support of ANT-1 Radio, «Alcohol, Not Tonight, I am Driving» Campaign, 17-20 June.
- «Less blood on the roads, more blood donators», Cooperation with Radio Thessaloniki, 6-8 June 2009.
- «Priority to life»: Cooperation with ERT3 Radio at the 74th International Trade Fair of Thessaloniki, 5-13 September 2009.
- 2nd Eco-Cars Exhibition for eco cars and new transportation technologies, Thessaloniki, 19-20 September 2009.
- Kozani's Traffic Police Exhibition, «Alcohol, Not Tonight, I am Driving» Campaign, 17-23 September 2009.
- Arta's Traffic Police Exhibition, «Alcohol, Not Tonight, I am Driving» Campaign, 26-28 September 2009.

- Tellogleion Institute: Strategies for reducing of alcohol abuse, «Alcohol, Not Tonight, I am Driving» Campaign, 30 September 2009.
- Kilkis Traffic Police Exhibition, «Alcohol, Not Tonight, I am Driving» Campaign, 12-14 October 2009.
- 4th National Road Safety Congress in Athens, «Alcohol, Not Tonight, I am Driving» Campaign (5,6/11).
- Aradippos Municipality of Cyprus, «Alcohol, Not Tonight, I am Driving» Campaign, 18-24 November 2009.
- Thessalonikis Traffic Police Exhibition, «Alcohol, Not Tonight, I am Driving» Campaign, 11-21 December 2009.

H.I.T. in the Media (Selected Interviews and Presentations)

1. «Inauguration of H.I.T.'s new buildings», Tipos Thessalonikis Newspaper, 17-12-2009.
2. «Holograms in cars: A final piece of technology – HIT's efforts for public awareness against accidents in cooperation with Thessaloniki's Traffic Police», Studio appearance of A. Tsioutras and interview of Mr. Simopoulos (Police Officer) on «Metro» TV show, hosted by Solon Ampatzis, Macedonia TV, 15-12-2009.
3. «4000 crippled per year after road accidents», Studio appearance of A. Tsioutras on «Simvainei Tora», hosted by Popi Tsapanidou, NET TV, 11-12-2009.
4. «We are all candidate victims of road accidents…The ten major reasons of road accidents – HIT's ADHRITO project», Studio appearance of A. Tsioutras on «Simvainei Tora», hosted by Popi Tsapanidou, NET TV, 16-11-2009.
5. «Greek attitude while driving and CERTH/HIT's efforts. The day after the 4th Pan-Hellenic Conference for Road Safety», Studio appearance of A. Tsioutras on «Ti Simvainei?», hosted by Veni Sapka, Vergina TV, 8-11-2009.
6. «Five fatalities every day in Greece from road accidents. HIT's active role at the 4th Pan-Hellenic Conference for Road Safety», Studio appearance of A. Tsioutras on «Simvainei Tora», hosted by Popi Tsapanidou, NET TV, 6-11-2009.
7. «Thessaloniki city: Only bicycles on the cyclists», Studio appearance of A. Tsioutras on «Simvainei Tora», hosted by Popi Tsapanidou, NET TV, 22-10-2009.
8. «Car drivers are not aware of pedestrians», Studio appearance of A. Tsioutras on «Simvainei Tora», hosted by Popi Tsapanidou, NET TV, 8-10-2009.
9. «H.I.T.'s efforts with the help of a driving simulator for the reduction of drinking and driving», An interview of A. Tsioutras by Mpampis Mastoropoulos, ERT-3 Radio, 2-10-2009.
10. «Innovative motorcycle simulator at CERTH in cooperation with the French center INRETS», An interview of D. Margaritis to Adesmeftos Newspaper, 1-10-2009.
11. «Road accidents that can become lessons via CERTH's driving simulator. How car and bike drivers are reacting under the influence of alcohol at CERTH's simulators», An interview of D. Margaritis by Maria Litou, Aggelioforos Newspaper, 1-10-2009.
12. «Motorcycle simulator at CERTH in cooperation with the French center INRETS», An interview of D. Margaritis, Avriani Newspaper, 1-10-2009.
13. «Socking evidence for alcohol abuse by young people in Greece – Children 13 years are drinking vodka – Driving simulation under the influence of alcohol by CE.R.T.H.» An interview of D. Margaritis by Nikoleta Mpouka, Macedonia Newspaper, 1-10-2009.
14. «The number of young people who drink are increasing rapidly – Motorcycle simulator in CERTH in cooperation with French center INRETS», An interview of D. Margaritis by Markella Alexiou, Tipos Thessalonikis Newspaper, 1-10-2009.
15. «December 2009: Motorcycle simulator at CE.R.T.H.», Espresso Newspaper, 1-10-2009.
16. «2012 - Blocked roads in Thessaloniki: Metro's construction will not save Thessaloniki's traffic problems believe the traffic engineers». Interviews of A. Tsioutras, P. Kritikos, J. Toskas by Ntonia Kanitsaki, Aggelioforos Newpaper, 30-9-2009.
17. «H.I.T. acts as a supporter of the 2nd Exhibition Eco-Cars at the American Farm School of Thessaloniki – It is also one of the pioneers in Greece using the hybrid technology», Auto Business Review Magazine, p. 18 & 21, 30-9-2009.

18. «The utopia of the day without cars: What is the meaning of such a day against the use of cars, in a country engaged so much with our cars?», Article by A. Tsioutras, Bloggers of electronic newspaper www.voria.gr, 24-9-2009.
19. «Thessaloniki's Ring Road and incredible traffic violationsv», Studio appearance of A. Tsioutras on «Simvainei Tora», hosted by Popi Tsapanidou, NET TV, 23-9-2009.
20. «Paneuropean day without cars and without…bicycles», An interview of A. Tsioutras by Malama Kiakilidou, Macedonia TV, News Bulletin, 22-9-2009.
21. «Kozani's traffic police and HIT's participation at the 25th Commercial and Small Industry Exhibition of West Macedonia – Driving simulation under the influence of alcohol of CERTH/HIT's», Webpage Kozani.net, 20-9-2009.
22. «Traffic police and HIT are cooperating for the promotion of reducing road accidents caused by alcohol abuse», HIT's mini-van at the Mediterranean Cosmos. An interview of A. Tsioutras to Sotiris Kiriakidis, Radio Thessaloniki, 94.5 FM, 19-9-2009.
23. «Fatal road accident related to rain conditions. Advises for aquaplaning avoidance», Studio appearance of A. Tsioutras on «Simvainei Tora», hosted by Popi Tsapanidou, NET TV, 18-9-2009.
24. «H.I.T.'s driving simulator and safe driving at the International Trade Fair of Thessaloniki in ERT-3 Radio's Pavilion. Title of the event: Priority to life», Interviews of Xanthos Hytas and Themis Kartsiotis, ET-3 TV, News bulletin, 11-9-2009.
25. «Fatal road accidents – The need for traffic education in schools» Studio appearance of A. Tsioutras on «Simvainei Tora», hosted by Popi Tsapanidou, NET TV, 11-9-2009.
26. «Driving simulator in ERT-3's pavilion at the International Trade Fair of Thessaloniki», An interview by A. Tsioutras by Dimitris Oikonomou, Vasilis Lyrintzis and Xanthos Hytas, «Proini Grammi» TV Show, NET TV, 9-9-2009.
27. «The need of traffic education and HIT's efforts via driving simulators, road safety campaigns and books for schools», An interview of A. Tsioutras by Triantafyllos Tsoulfas and Sotiris Voutselas, «Epistrefontas» Radio Show, ERT-3 Radio, 6-9-2009.
28. «SMART-CM: A smart solution for safer and cheaper transports», An interview of G. Aifadopoulou, by Annie Karolidou, Special Edition of Naftemporiki, 1-9-2009.
29. «The construction of the innovative zone of Thessaloniki has been blocked – The need for its development and CERTH's role», Interview of A. Tsioutras by Alexandros Valsamidis, Macedonia TV, News bulletin, 8-7-2009.
30. «Advises on summer driving», Studio appearance of A. Tsioutras on «Simvainei Tora», hosted by Popi Tsapanidou, NET TV, 25-6-2009.
31. «George Tsalikis and the campaign against drinking and driving», Interviews of George Tsalikis, A. Tsioutras, K. Stefou by Natasa Valenti, «Koritsia gia spiti» TV show, Macedonia TV, 22-6-2009.
32. «Alcohol and driving. The event of HIT and ANT-1 Radio at the Mediterranean Cosmos», Interviews of Aris Stathakis, Evangelos Bekiaris, A. Tsioutras, by Kostas Stefou, ANT-1 Radio, 19-6-2009.
33. «Hybrid cars: HIT's experience after years of research», Studio appearance by A. Tsioutras on FM 100 Radio, hosted by Sakis Panas, 18-6-2009.
34. «Broadcast of the info spot for the event in the Mediterranean Cosmos shopping center. HIT and ANT-1 Radio are cooperating for the promotion of road safety». ANT-1 TV and Radio, for the period 8-6-2009 and 17-6-2009.
35. Public transport, Interview of A. Tsioutras to Ntonia Kanitsaki, Aggelioforos Newspaper, June 2009.
36. Hybrid cars, Interview of A. Tsioutras to Ntonia Kanitsaki, Aggelioforos Newspaper, June 2009.
37. «Black spots in Chalkidi's roads, Studio appearance by A. Tsioutras on «Simvainei Tora», hosted by Popi Tsapanidou, NET TV, 17-6-2009.
38. «Black spots in Chalkidi's roads – Driving a vehicle with special needs», Article of A. Tsioutras. An interview of A. Tsioutras by Ntonia Kanitsaki, Aggelioforos, June 2009.
39. «Road safety advises and traffic education during the summer donation of Radio Thessaloniki, An interview of A. Tsioutras by Sotiris Kiriakidis, 8-7-2009.
40. «Road safety advises and traffic education during the summer donation of Radio Thessaloniki, An interview of A. Tsioutras by Sakis Moshis, 7-7-2009.
41. «Road safety advises and traffic education during the summer donation of Radio Thessaloniki, An

interview of A. Tsioutras by Sotiris Kiriakidis, 6-7-2009.

42. «Alcohol – Not Tonight – I am driving. The continuous efforts by H.I.T. and its cooperation with radio Thessaloniki», An interview of A. Tsioutras to Sotiris Kiriakidis, 3-7-2009.
43. Broadcast of 5 TV spots against drinking and driving, for the use of seat belts and helmets with the participation of Giorgos Tsalikis in 23 TV stations and one radio spot against drinking and driving in 60 radio stations during the period 27-6-2009 and 27-8-2009.
44. «HIT supports Radio Thessaloniki's blood donation and gives the message: Less blood on the roads, more blood donators», An interview of A. Tsioutras by Stefanos Diamantopoulos, Radio Thessaloniki, 94.5FM, 24-5-2009.
45. «Side effects of alcohol abuse before driving are presented on a special driving simulator» Interviews of George Morfakis, Dimitrios Dimitriou and Pavlos Spanidis by Kostas Savvas, News bulletin, ANT-1 Cyprus, May 2009.
46. «Driving simulation under the influence of alcohol: Test drive during the exhibition», An interview of Pavlos Spanidis, by Andreas Azas, News bulletin of Channel S TV, Cyprus, May 2009.
47. «The nightmare of drunk driving is being simulated», An interview of Pavlos Spanidis by Christina Mavrou, MEGA TV News bulletin, Cyprus, May 2009.
48. «HIT's driving simulator in Cyprus», An interview of George Morfakis by Stefania Savva, RIK1 TV News bulletin, Cyprus, May 2009.
49. «Driving under virtual drunk abuse: Test drive at the International Exhibition of Cyprus», Interviews of Pavlos Spanidis, George Morfakis, Dimitrios Dimitriou and Michael Giorgallas, by Efi Aristeidou, Plus TV News bulletin, Cyprus, May 2009.
50. «Advertising signs for road users», An interview of A. Tsioutras, by Stefanos Sklavenitis, ET3 TV News bulletin, 29-3-2009.
51. «The district attorney's office for the advertising signs nearby the roads of Thessaloniki», An interview of A. Tsioutras by Stefanos Sklavenitis, ET3 TV News bulletin, 27-3-2009.
52. «Transportation asphyxia in Thessaloniki», Studio appearance of A. Tsioutras on «Symvainei Tora» TV show, hosted by Popi Tsapanidou, NET TV, 24-3-2009.
53. «Growth and development: H.I.T.'s Director and CE.R.T.H.'s Vice President Prof. G. Giannopoulos was present at a lecture of CPERI's Director, Prof. A. Konstantopoulos in contribution with the company Filippou SA, Today in Thessaloniki, Newspaper, by Sofia Mylona, 12-3-2009.
54. «Poor workmanship at roads», An interview of A. Tsioutras by Stefanos Sklavenitis, ET3 TV News bulletin, 20-2-2009.
55. «Road un-safety in Greece – H.I.T.'s efforts to reduce the phenomenon» Studio appearance by A. Tsioutras on «What's happening?», hosted by Veni Sapika, Vergina TV, 17-1-2009.
56. «Advantages of hybrid cars against ordinary cars for the environmental protection», An interview with A. Tsioutras by Stefanos Sklavenitis, ET3 TV News bulletin, January, 2009.
57. «Advises for driving on the snow with the help of a driving simulator», An interview with A. Tsioutras, by Stefanos Sklavenitis, ET3 TV News bulletin, 13-1-2009.
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