

TNO Traffic and Transport report

**ECTRI - Research Infrastructures (RI)
Survey Results**

Schoemakerstraat 97
P.O. Box 6041
2600 JA Delft
Nederland

www.tno.nl

T +31 15 269 68 78
F +31 15 269 77 82
info@vv.tno.nl

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Authors G.R.M. Jansen
M. Baart.

City Delft (The Netherlands)

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1 INTRODUCTION

ECTRI (European Conference of Surface Transport Research Institutes) is a Network of Excellence (being set up) in association with the 6th Framework programme of the European Commission. It actively promotes the co-operation of surface transport research and is participating in the creation of the European Research Area.

One of the joint activities of ECTRI will be the development and use of joint Research Infrastructures (RI) and adaptation of existing equipment for shared use:

- Transnational access
- Development of communication networks between individual facilities
- Design studies including feasibility studies and technological preparatory work for new infrastructures
- Development of new infrastructures: limited supplementary funding.

RI include the following services and facilities:

- a. Test tracks and crash facilities
- b. Simulators, other simulation facilities, models
- c. Field and other laboratories
- d. Databases on transport, traffic and related impacts
- e. Libraries and literature databases

One of the tasks identified at the ECTRI-meeting in Lyon (September 2001) was to propose a sub programme on joint RI as part of the overall ECTRI-proposal to the Commission. In order to do so we have performed a survey amongst the ECTRI-partners, to identify major and unique research, development and testing facilities as well as other services that can be utilised to support R&D in the domain of the ECTRI-programme. The survey constitutes a basis for developing a framework for mutual access to these facilities and services. It allows us also to identify important gaps in the RI given the needs stemming from the joint R&D programme and subsequently propose the development of new facilities and services.

The survey was limited to major RI facilities and services, which are of interest to a variety of users from several countries and can be used for a rather broad scope of studies. In the case of laboratories, tracks and simulators this would mean that we included only those of a replacement cost of more than e.g. 1 million Euro. This was done in order to avoid a costly collection of data on small, ad hoc facilities strongly related to specific singular projects.

Furthermore this survey was limited to the scope of the ECTRI-network. Although not determined definitively yet we *included* the following areas:

- Freight and passenger transport by all surface modes
- Traffic flow and driver behaviour in all modes
- Safety analysis and vehicle control
- Environmental impacts (emissions, noise, fuels)
- Traffic control centres for all modes

The following areas were *excluded*:

Construction and materials of infrastructure

- Pavement and structures

2 SURVEY RESULTS

All ECTRI-members (except LNEC from Portugal and Universities Transport Studies Group from the United Kingdom) have contributed to this survey.

This resulted in the following overview of Research Infrastructure (number of facilities, services within ECTRI).

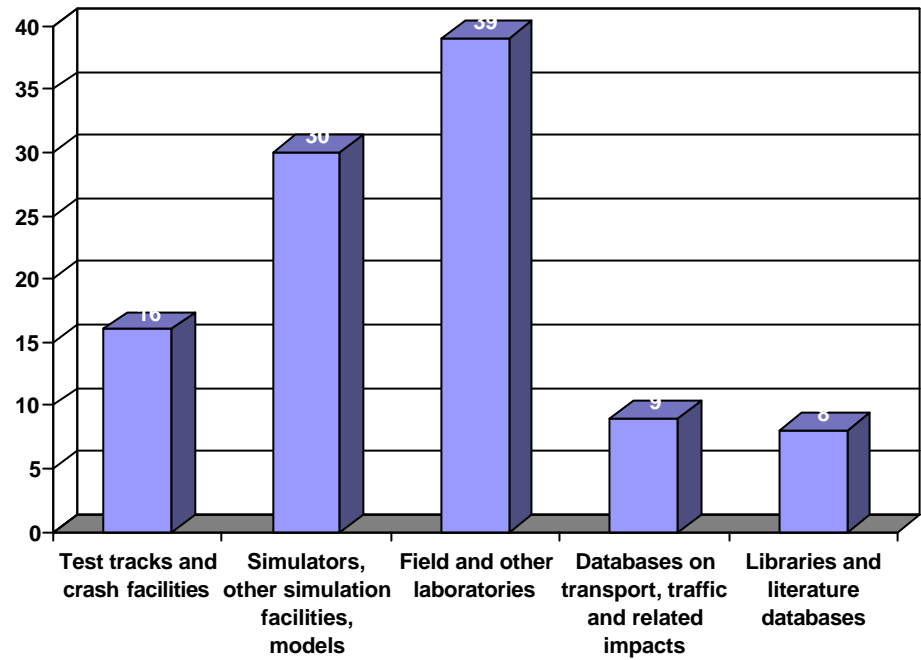


Figure 3-1: Overview of Research Infrastructure within ECTRI (number of facilities, services)

In the following paragraphs you will find a list of Research Infrastructure by category: The detailed survey forms can be found in the appendices.

Category	List in paragraph	Survey forms in appendix
Test tracks and crash facilities	3.1	B1
Simulators, other simulation facilities, models	3.2	B2
Field and other laboratories	3.3	B3
Databases on transport, traffic and related impacts	3.4	B4
Libraries and literature databases	3.5	B5

2.1 Test tracks and crash facilities

CDV3	Geotechnical Laboratory Testing Field
INRETS1	Test track Satolas
INRETS2	Test track Satory
INRETS3	Catapult Crash Facility
INRETS4	Small Catapult Crash Facility
INRETS5	Crash Facility
TNO11	Full-scale Crash Test Facility
TNO12	Inversed Crash Simulator
TNO13	Small Test Sleds for Component and Subsystem tests
TRL1	Test Track and Road System
TRL2	Dynamic Impact Test facility
TRL3	Dynamic Restraint Test facility
TRL4	Impact Test facility
VTI11	VTI Crashlab
VTT4	Towing tank
VTT5	Multipurpose basin

abbreviations are explained in Appendix A
for detailed survey forms see Appendix B1

2.2 Simulators, other simulation facilities, models

AVV1	Test Centre for Traffic Systems
DLR3	Driver assistance systems test lab
DLR4	Laboratory for the Test and Evaluation of Railway Control Systems
FHG	Department of Intermodal Traffic + Transportation Information & Management
HIT5	Dynamic driving simulator
INRETS12	Driving simulator
INRETS13	Driving simulator
INRETS17	Models
POLITO1	MITHRA model
POLITO5	Arena
POLITO6	MT.MODEL
POLITO7	TRIPS
TNO1	TNO Centre for Fire Research
TNO2	MIXIC
TNO3	ScenarioVerkenner
TNO4	SMILE: Strategic Model for Integral Logistics and Evaluation
TNO9	Field equipment: NO _x , PM ₁₀ , SO ₂ , BTX monitors Analytical Laboratories: GC-MS; HPLC; IC; AAS Air pollution dispersion models: CAR: Streetcanyon model; TNO-Traffic: highway traffic model
TNO10	MADYMO
TNO14	ADVANCE – toolbox for the development of integrated intelligent powertrain and chassis control systems
TNO17	Moving-base driving simulator
TRL5	Numerical simulation facility
TRL6	Driving Simulation Centre
UPM2	EMM/2 and TRIPS
VTI6	Two lane rural road traffic simulator
VTI7	VTI/TPR model – A freight transport forecasting system
VTI8	Toll Queue Analysis (TQA)
VTI12	VTI Driving Simulator VTI Truck Driving Simulator
VTT1	Light-duty vehicle emissions and energy consumption test facility
VTT2	Heavy-Duty vehicle emissions and energy consumption test facility
VTT3	Heavy-duty engine emissions and energy consumption test facility

abbreviations are explained in Appendix A
for detailed survey forms see Appendix B2

2.3 Field and other laboratories

AVV1	Test Centre for Traffic Systems
CDV2	Floating Car
CDV5	Gas chromatograph GC 8160
DLR1	Test field for traffic detection devices and measurement of traffic data
DLR2	Two Mobile Traffic-Data Laboratories
FHG	Department of Intermodal Traffic + Transportation Information & Management
HIT2	Internet Portal for Transport applications
HIT3	Photometric and Visibility Laboratory
HIT4	A Mobile Transportation Research Laboratory
HIT6	Virtual Reality Lab for Transport applications
HIT7	Telematics-equipped test vehicle
INRETS6	Ergonomic Design Seat
INRETS7	Roller Test Bench
INRETS8	Engine Test Bench
INRETS9	Electronic Test Bench
INRETS10	Fuel Cell laboratory for transport applications
INRETS11	Test wheel
INRETS14	Instrumented Cars
INRETS15	Evaluation environmental laboratory (noise)
KTI1	Research facility for vehicle emissions and fuel consumption testing
KTI2	Acoustical Laboratory
POLITO2	Environmental noise monitoring for external sites
POLITO3	Symphonic (two channels)
POLITO4	NU metrics traffic counters
POLITO8	Magneto-inductive system for testing of ropes of cableways
TNO1	TNO Centre for Fire Research
TNO5	VEHIL (Vehicle Hardware in the Loop)
TNO6	Crosswind Simulator
TNO7	Delft Tyre Test Trailer
TNO8	TUD Drum test stand
TNO9	Field equipment: NO _x , PM ₁₀ , SO ₂ , BTX monitors Analytical Laboratories: GC-MS; HPLC; IC; AAS Air pollution dispersion models: CAR: Streetcanyon model; TNO-Traffic: highway traffic model
TNO16	Vehicle Emissions Test Facilities
TNO18	Instrumented car for computer assisted driving (ICACAD)
TRL7	Environment Facility
VTI1	Tyre test facilities
VTI2	VTI Laser RST
VTI3	VTI Laser RDT
VTI4	BV14, Friction measuring equipment
VTI5	BV12, Friction measuring equipment

abbreviations are explained in Appendix A
 for detailed survey forms see Appendix B3

2.4 Databases on transport, traffic and related impacts

AVV1	Test Centre for Traffic Systems
CDV1	Access to databases: IRTAD, OLISnet, PIARC, ECMT, TRIP Access to restricted documents of ECMT, PIARC and OECD
DLR5	Databases on airtraffic and road traffic
FHG	Department of Intermodal Traffic + Transportation Information & Management
HIT1	Database Repository for Archived Transportation Data
INRETS16	Databases on environment, mobility and accidents
TNO15	DRIVES – database
TRL7	Environment Facility
VTI10	Transguide

abbreviations are explained in Appendix A
for detailed survey forms see Appendix B4

2.5 Libraries and literature databases

AVV1	Test Centre for Traffic Systems
CDV4	Library database CLAVIUS in operating system WINDOWS
DTF	Danish Transport Research Institute
KTI3	Documentation and Information Centre (The Library)
TNO1	TNO Centre for Fire Research
UPM1	Transport Journals Library
VTI9	Library and Information Centre (BIC)

abbreviations are explained in Appendix A
for detailed survey forms see Appendix B5

APPENDIX

A Abbreviations of ECTRI-members

AVV	A.V.V. (Transport Research Centre) Ministry of Transport, Public Works and Water Management P.O. BOX 1031 3000 BA ROTTERDAM THE NETHERLANDS tel : +31 10 282 56 05 fax : +31 10 282 56 39
CDV	Transport Research Centre C.D.V. Lisenska 33a CZ – 636 00 BRNO CZECH REPUBLIC tel : 00 420 5 48423710
DLR	Verkehrsforschung Institute (VFI) D.L.R. Berlin – Adlershof Rutherfordstraße 2 12489 BERLIN – ADLERSHOF GERMANY
DTF	Danmarks Transport Forskning Knuth – Winterfeldts Allé Bygning 116 Vest DK-2800 Kgs LYNGBY DANEMARK tel : +45 45 25 65 22 fax : +45 45 93 65 33
FHG	Fraunhofer Gesellschaft 01069 DRESDEN GERMANY tel : +49 351 46 40 800 fax : +49 351 46 40 803
HIT	Hellenic Institute of Transport 6 th km Charilaou Thermi Rd P.O. BOX 361 57001 THERMI THESSALONIKI GREECE tel : 00 30 31 498 263 fax : 00 30 31 498 269
INRETS	INRETS Case 24 25, avenue François Mitterrand 69675 BRON cedex France +33 (0)4 72 14 23 41 + 33 (0)4 72 37 84 24
KTI	KTI Institute for Transport Sciences Thán – Károly U3-5 H 1119 BUDAPEST HUNGARY
LNEC	Transport Network Department - LNEC

	Avenida do Brasil, 101 1700-066 LISBOA PORTUGAL
POLITO	Politecnico di Torino Corso Duca degli Abruzzi, 24 TORINO 10129 ITALY tel : +39 011 564 56 13 fax : +39 011 564 56 99
T.Ø.I.	T.Ø.I. Institute of Transport Economics Postbox 6110 Etterstad N-0 605 OSLO 6 NORWAY tel : +47 225 73800 fax : +47 225 70290
TNO	TNO Traffic and Transport P.O. BOX 6041 2600 JA DELFT THE NETHERLANDS tel : +31 15 269 6870 fax : +31 15 269 7782
TORG	Universities Transport Studies Group Transport Operation Research Group Departement of Civil Engineering Claremont Tower University of Newcastle NEWCASTLE UPON TYNE NE1 7RU UNITED KINGDOM
TRL	Transport Research Laboratory Old Wokingham Road CROWTHORNE, Berks RG 45 6 AU UNITED KINGDOM tel : +44 1344 770194 fax : +44 1344 770880
UPM	Universidad Politecnica de Madrid ESTI de Caminos, Canales y Puertos Ciudad Universitaria s/n 28040 MADRID SPAIN tel : 34 91 336 53 73 fax : 34 91 549 26 28
VTI	V.T.I. Swedish National Road and Transport Research Institute SE – 58195 LINKÖPING SWEDEN tel : +46 13 20 40 00 fax : +46 13 20 40 82
VTT	V.T.T.

	Lämpöminenkuja 2 PL 1800 02044 VTT FINLAND tel : +358 9 456 6210 fax : +358 9 464 850
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B Survey forms

B.1 Test tracks and crash facilities

Survey form – CDV3

Type of RI: (Tick appropriate box)	<input checked="" type="checkbox"/> Test tracks and crash facilities <input type="checkbox"/> Simulators, other simulation facilities, models <input type="checkbox"/> Field and other laboratories <input type="checkbox"/> Databases on transport, traffic and related impacts <input type="checkbox"/> Libraries and literature databases
Owner	Transport Research Centre
Name of the facility	Geotechnical Laboratory Testing Field
Contact (Name, address, phone, fax, e-mail)	Ing. Karel Pospisil, Lisenska 33a, 636 00 Brno 00 420 5 48423726 00 420 5 48423712 pospasil@cdv.cz
Short description Maximum 100 words	Ferroconcrete bath divided into 3 sections where various types of soils may be placed. The Testing Field offers possibility to follow behaviour of soil under various water regimes.
Unique features Maximum 100 words	It is possible to measure geotechnical parameters of subgrade and subbase
Quantitative data on capacity or capability	Pilot operation has started
Availability for outside use (Yes/no; conditions)	Yes
Typical projects which used the facility in the last 2 years	Projects: Deformation characteristics of soil making pavement subgrade Characteristics of soil reinforced by geosynthetical and other materials
Financing of the facility (e.g. lump sum, through projects, dedicated grants, etc)	Dedicated grant
Comparable facilities in EU	Not known
Plans for further development of this or other research facilities	The further development depends on the results of pilot operation

Survey form – INRETS 1

Type of RI: (Tick appropriate box)	<input checked="" type="checkbox"/> Test tracks and crash facilities <input type="checkbox"/> Simulators, other simulation facilities, models <input type="checkbox"/> Field and other laboratories <input type="checkbox"/> Databases on transport, traffic and related impacts <input type="checkbox"/> Libraries and literature databases
Owner	INRETS
Name of the facility	Test track Satolas
Contact (Name, address, phone, fax, e-mail)	Dominique Cesari dominique.cesari@inrets.fr
Short description Maximum 100 words	A 2 km circular circuit is used for crash tests (vehicles and test barriers) and for experiments on driver vigilance, perception of road signals, truck and bus stability, and vehicle noise.
Unique features Maximum 100 words	
Quantitative data on capacity or capability	
Availability for outside use (Yes/no; conditions)	Yes
Typical projects which used the facility in the last 2 years	
Financing of the facility (e.g. lump sum, through projects, dedicated grants, etc)	Financing of these infrastructures is obtained through a mix between grants from the government, and from industrial and european projects
Comparable facilities in EU	
Plans for further development of this or other research facilities	

Survey form – INRETS 2

Type of RI: (Tick appropriate box)	<input checked="" type="checkbox"/> Test tracks and crash facilities <input type="checkbox"/> Simulators, other simulation facilities, models <input type="checkbox"/> Field and other laboratories <input type="checkbox"/> Databases on transport, traffic and related impacts <input type="checkbox"/> Libraries and literature databases
Owner	French Ministry of Defence
Name of the facility	Test track Satory
Contact (Name, address, phone, fax, e-mail)	Jean Marc Blosseville jean-marc.blosseville@inrets.fr
Short description Maximum 100 words	Several circuits are in use , with sinuous road, , linear road,...INRETS used them for ITS with vehicles which are equipped with electronic sensors (reading of road signals, reading of white lines along road, guidance by screen.... The Ministry of Defence is the owner of the track, INRETS is using it for experiments with instrumented vehicles.
Unique features Maximum 100 words	
Quantitative data on capacity or capability	
Availability for outside use (Yes/no; conditions)	Yes
Typical projects which used the facility in the last 2 years	
Financing of the facility (e.g. lump sum, through projects, dedicated grants, etc)	Financing of these infrastructures is obtained through a mix between grants from the government, and from industrial and european projects
Comparable facilities in EU	
Plans for further development of this or other research facilities	

Survey form – INRETS 3

Type of RI: (Tick appropriate box)	<input checked="" type="checkbox"/> Test tracks and crash facilities <input type="checkbox"/> Simulators, other simulation facilities, models <input type="checkbox"/> Field and other laboratories <input type="checkbox"/> Databases on transport, traffic and related impacts <input type="checkbox"/> Libraries and literature databases
Owner	INRETS
Name of the facility	Catapult Crash Facility
Contact (Name, address, phone, fax, e-mail)	LBMC laboratory (Lyon-Bron) jean-pierre.verriest@inrets.fr
Short description Maximum 100 words	Large hydraulically driven catapult capable of propelling a vehicle of 1.5 tonnes at 120 kph over a launching distance of 65 m. The catapulted vehicle crashes into an impact wall , another vehicle or any other obstacle.
Unique features Maximum 100 words	
Quantitative data on capacity or capability	
Availability for outside use (Yes/no; conditions)	Yes
Typical projects which used the facility in the last 2 years	
Financing of the facility (e.g. lump sum, through projects, dedicated grants, etc)	Financing of these infrastructures is obtained through a mix between grants from the government, and from industrial and european projects
Comparable facilities in EU	
Plans for further development of this or other research facilities	

Survey form – INRETS 4

Type of RI: (Tick appropriate box)	<input checked="" type="checkbox"/> Test tracks and crash facilities <input type="checkbox"/> Simulators, other simulation facilities, models <input type="checkbox"/> Field and other laboratories <input type="checkbox"/> Databases on transport, traffic and related impacts <input type="checkbox"/> Libraries and literature databases
Owner	INRETS
Name of the facility	Small Catapult Crash Facility
Contact (Name, address, phone, fax, e-mail)	LBMC laboratory (Lyon-Bron) jean-pierre.verriest@inrets.fr
Short description Maximum 100 words	Small catapult which propels a trolley equipped with a stopping system permitting the simulation of automobile type impacts by precise monitoring of the deceleration and the stopping distance. The speed reached is 50 kph for a weight of 600 kg and up to 95 kph for a weight of 200 kg. This equipment is used to test air-bag and safety belts for seats.
Unique features Maximum 100 words	
Quantitative data on capacity or capability	
Availability for outside use (Yes/no; conditions)	Yes
Typical projects which used the facility in the last 2 years	
Financing of the facility (e.g. lump sum, through projects, dedicated grants, etc)	Financing of these infrastructures is obtained through a mix between grants from the government, and from industrial and european projects
Comparable facilities in EU	
Plans for further development of this or other research facilities	

Survey form – INRETS 5

Type of RI: (Tick appropriate box)	<input checked="" type="checkbox"/> Test tracks and crash facilities <input type="checkbox"/> Simulators, other simulation facilities, models <input type="checkbox"/> Field and other laboratories <input type="checkbox"/> Databases on transport, traffic and related impacts <input type="checkbox"/> Libraries and literature databases
Owner	INRETS
Name of the facility	Crash Facility
Contact (Name, address, phone, fax, e-mail)	LBA laboratory (Marseille). christian.brunet@inrets.fr
Short description Maximum 100 words	Used to evaluate injuries of pedestrians by cars.
Unique features Maximum 100 words	
Quantitative data on capacity or capability	
Availability for outside use (Yes/no; conditions)	Yes
Typical projects which used the facility in the last 2 years	
Financing of the facility (e.g. lump sum, through projects, dedicated grants, etc)	Financing of these infrastructures is obtained through a mix between grants from the government, and from industrial and european projects
Comparable facilities in EU	
Plans for further development of this or other research facilities	

Survey form – TNO11

Type of RI: (Tick appropriate box)	<input checked="" type="checkbox"/> Test tracks and crash facilities <input type="checkbox"/> Simulators, other simulation facilities, models <input type="checkbox"/> Field and other laboratories <input type="checkbox"/> Databases on transport, traffic and related impacts <input type="checkbox"/> Libraries and literature databases
Owner	TNO Automotive
Name of the facility	Full-scale Crash Test Facility
Contact (Name, address, phone, fax, e-mail)	TNO Automotive Crash Safety Centre PO Box 6033 2600 JA Delft The Netherlands tel +31 15 269 63 44, fax +31 15 257 21 04, laboratories@wt.tno.nl
Short description Maximum 100 words	The Crash Safety Centre has a wide range of experimental facilities available, including a full-scale Carsh Laboratory. The laboratory has recently (1999) been comprehensively extended and improved, resulting in a modern Crash Laboratory, with state-of-the-art equipment.
Unique features Maximum 100 words	<ul style="list-style-type: none"> - All preparation and test activities can be carried out indoors (even including high speed truck tests and dynamic roll over testing) - All required static and movable barriers - Test scenarios for frontal, angled, offset, underrun, pole, side, rear, car-to-pole, roll-over and vehicle-to-vehicle impact tests - Certified by EURO-NCAP - Workshop available for extensive test preparations, minor repairs, last-minute vehicle modifications - Climate-controlled dummy workshop and temperature-controlled test areas - All required test dummies are available - Modern onboard data-acquisition system
Quantitative data on capacity or capability	<ul style="list-style-type: none"> - Impact velocities from 5 km/h up to 100 km/h - Max. vehicle/object mass of 12 tonnes - Max. drive length of 120 m indoors - Three glass-covered filmpits (one in the centre of the track, to film vehicle-vehicle impacts) - 8 m overhead film gantry - Six preparation bays for cars and two for trucks/buses available (each with hydraulic lifts) - Three overhead cranes and two forklifts - KODAK HG2000 high-speed video system - HMI lighting (160,000 lux)
Availability for outside use (Yes/no; conditions)	Yes (payment required)
Typical projects which used the facility in the last 2 years	<ul style="list-style-type: none"> - yearly EURO NCAP tests - numerous test for automotive industry

Financing of the facility (e.g. lump sum, through projects, dedicated grants, etc)	
Comparable facilities in EU	
Plans for further development of this or other research facilities	

Survey form – TNO12

Type of RI: (Tick appropriate box)	<input checked="" type="checkbox"/> ...Test tracks and crash facilities <input type="checkbox"/> Simulators, other simulation facilities, models <input type="checkbox"/> Field and other laboratories <input type="checkbox"/> Databases on transport, traffic and related impacts <input type="checkbox"/> Libraries and literature databases
Owner	TNO Automotive
Name of the facility	Inversed Crash Simulator
Contact (Name, address, phone, fax, e-mail)	TNO Automotive Crash Safety Centre PO Box 6033 2600 JA Delft The Netherlands tel +31 15 269 63 44, fax +31 15 257 21 04, laboratories@wt.tno.nl
Short description Maximum 100 words	The Inversed Crash Simulator is one of the most powerful systems of its kind in the world. The accelerator has a maximum force of 4000 kN controlled by two parallel 4-stage hydraulic valves.
Unique features Maximum 100 words	One of the most powerful of its kind (max. force 4000 kN) Pulses can be stored in a database and repeated, without calibration test, with an accuracy of app. 1 g.
Quantitative data on capacity or capability	Maximum payload: 2500 kg Maximum acceleration: 100 g Minimum acceleration: 5 g Maximum acceleration gradient: 8 g / m s Maximum velocity: 72 km/h Maximum pulse duration: 200 ms Maximum stroke: 1650 mm
Availability for outside use (Yes/no; conditions)	Yes (payment required)
Typical projects which used the facility in the last 2 years	<ul style="list-style-type: none"> - Restraint system tests - Airbag development tests - Structural crashworthiness development tests of cars, trucks, buses, aircraft and their components
Financing of the facility (e.g. lump sum, through projects, dedicated grants, etc)	
Comparable facilities in EU	
Plans for further development of this or other research facilities	

Survey form – TNO13

Type of RI: (Tick appropriate box)	<input checked="" type="checkbox"/> Test tracks and crash facilities <input type="checkbox"/> Simulators, other simulation facilities, models <input type="checkbox"/> Field and other laboratories <input type="checkbox"/> Databases on transport, traffic and related impacts <input type="checkbox"/> Libraries and literature databases
Owner	TNO Automotive
Name of the facility	Small Test Sleds for Component and Subsystem tests
Contact (Name, address, phone, fax, e-mail)	TNO Automotive Crash Safety Centre PO Box 6033 2600 JA Delft The Netherlands tel +31 15 269 63 44, fax +31 15 257 21 04, laboratories@wt.tno.nl
Short description Maximum 100 words	The Crash Safety Centre has two small deceleration sled facilities available for performing the complete repertoire of component and subsystem tests. One of these facilities (KBS) is dedicated device for the development and approval of adult restraint systems. The second sled (EBS) is dedicated for the development and approval of child restraint systems.
Unique features Maximum 100 words	<ul style="list-style-type: none"> - All required test dummies are available - Modern data-acquisition system - Climate-controlled dummy workshop and temperature-controlled test areas - KODAK HG2000 high-speed video system - HMI lighting (160,000 lux)
Quantitative data on capacity or capability	Maximum payload: 600 kg Maximum deceleration: 60 g Maximum velocity: 65 km/h
Availability for outside use (Yes/no; conditions)	Yes (payment required)
Typical projects which used the facility in the last 2 years	<ul style="list-style-type: none"> - Dynamic measurement of the force/deflection characteristic of energy-absorbing constructions and materials, such as crumple tubes, side members, B-pillards and padding - Door trim development for side-impact applications - Knee bolster development
Financing of the facility (e.g. lump sum, through projects, dedicated grants, etc)	
Comparable facilities in EU	
Plans for further development of this or other research facilities	

Survey form – TRL1

Type of RI: (Tick appropriate box)	<input checked="" type="checkbox"/> Test tracks and crash facilities <input type="checkbox"/> Simulators, other simulation facilities, models <input type="checkbox"/> Field and other laboratories <input type="checkbox"/> Databases on transport, traffic and related impacts <input type="checkbox"/> Libraries and literature databases
Owner	TRL Limited
Name of the facility	Test Track and Road System
Contact (Name, address, phone, fax, e-mail)	Peter Young TRL Limited Old Wokingham Road Crowthorne RG45 6 AU UK Tel: + 44 (0)1344 770007 Fax: + 44 (0) 1344 770880 pyoung@trl.co.uk
Short description Maximum 100 words	TRL's test track, large central area and road network are located on a secure wooded site, providing a carefully controlled and safe operating environment.
Unique features Maximum 100 words	<p>Large Loop: 2.2km. The width varies from 7.3m to 10.5m</p> <p>Banked Bend: enables vehicles to negotiate Large Loop at high speed. The balance speed is approximately 90km/h.</p> <p>Long Straight: runs from the foot of the Banked Bend for a distance of 500m. There are three lanes, each 3m wide with long "water spray" bars.</p> <p>Central Area: an unobstructed "pan" with diameter of 270m and a constant crossfall of 1 in 53. A system of underground ducts allows for power, telecom, water, signal and computer link cables.</p> <p>Impact Area: irregular shape, varying between 30m and 55m, with a maximum straight length of 500m.</p> <p>Small road system: reproduction of haphazard layouts</p>
Quantitative data on capacity or capability	Potential uses include: Product development and testing Vehicle handling and stability trials Tyre and braking tests Highspeed manoeuvres

	Fuel consumption and vehicle noise measurements Evaluation of road and vehicle-based instrumentation Driver training and testing Evaluation of new road layouts
Availability for outside use (Yes/no; conditions)	Yes
Typical projects which used the facility in the last 2 years	Barrier impact testing Skid resistance trials Tyre/road noise testing Variable message signing trials
Financing of the facility (e.g. lump sum, through projects, dedicated grants, etc)	Project funded
Comparable facilities in EU	
Plans for further development of this or other research facilities	

Survey form – TRL2

Type of RI: (Tick appropriate box)	<input checked="" type="checkbox"/> Test tracks and crash facilities <input type="checkbox"/> Simulators, other simulation facilities, models <input type="checkbox"/> Field and other laboratories <input type="checkbox"/> Databases on transport, traffic and related impacts <input type="checkbox"/> Libraries and literature databases
Owner	TRL
Name of the facility	Dynamic Impact Test facility
Contact (Name, address, phone, fax, e-mail)	P Bignell 44 (0)1344 770125 pbignell@trl.co.uk
Short description Maximum 100 words	Sled facility for conducting the controlled impact of components and vehicle subsystems. Equipped with up to date <u>data logging and high speed photography</u> .
Unique features Maximum 100 words	Powered by a falling weight the facility provides exceptionally good speed repeatability. Guided impact sled.
Quantitative data on capacity or capability	Max energy 240kJ
Availability for outside use (Yes/no; conditions)	Yes
Typical projects which used the facility in the last 2 years	Development of anthropomorphic test dummies.
Financing of the facility (e.g. lump sum, through projects, dedicated grants, etc)	Payment for tests.
Comparable facilities in EU	
Plans for further development of this or other research facilities	

Survey form – TRL3

Type of RI: (Tick appropriate box)	<input checked="" type="checkbox"/> Test tracks and crash facilities <input type="checkbox"/> Simulators, other simulation facilities, models <input type="checkbox"/> Field and other laboratories <input type="checkbox"/> Databases on transport, traffic and related impacts <input type="checkbox"/> Libraries and literature databases
Owner	TRL
Name of the facility	Dynamic Restraint Test facility
Contact (Name, address, phone, fax, e-mail)	P Bignell 44 (0)1344 770125 pbignell@trl.co.uk
Short description Maximum 100 words	Sled facility for conducting the controlled impact of components and vehicle subsystems. Equipped with up to date <u>data logging and high speed photography</u> .
Unique features Maximum 100 words	Powered by a elastic cords. Equipped with stopping devices as dictated by ECE Regs 44 & 80. Guided impact sled.
Quantitative data on capacity or capability	Max energy 300kJ
Availability for outside use (Yes/no; conditions)	Yes
Typical projects which used the facility in the last 2 years	Development of anthropomorphic test dummies. Research into strength of wheelchairs and wheelchair restraints in vehicles. Development of a test protocol for child seat side impact.
Financing of the facility (e.g. lump sum, through projects, dedicated grants, etc)	Payment for tests.
Comparable facilities in EU	
Plans for further development of this or other research facilities	

Survey form – TRL4

Type of RI: (Tick appropriate box)	<input checked="" type="checkbox"/> Test tracks and crash facilities <input type="checkbox"/> Simulators, other simulation facilities, models <input type="checkbox"/> Field and other laboratories <input type="checkbox"/> Databases on transport, traffic and related impacts <input type="checkbox"/> Libraries and literature databases
Owner	TRL
Name of the facility	Impact Test facility
Contact (Name, address, phone, fax, e-mail)	P Bignell 44 (0)1344 770125 pbignell@trl.co.uk
Short description Maximum 100 words	Facility for conducting the controlled impact of vehicles. Equipped with up to date data logging and high speed photography.
Unique features Maximum 100 words	Allows vehicle to vehicle impacts at any collision angle with the two vehicles, if required, travelling at different speeds. Allows impact off axis - road restraint systems, bridge supports, etc.
Quantitative data on capacity or capability	Max speed 115km/hr Max draught force 40kN
Availability for outside use (Yes/no; conditions)	Yes
Typical projects which used the facility in the last 2 years	European new car assessment programme.
Financing of the facility (e.g. lump sum, through projects, dedicated grants, etc)	Payment for tests.
Comparable facilities in EU	
Plans for further development of this or other research facilities	

Survey form – VTI11

Type of RI: (Tick appropriate box)	<input checked="" type="checkbox"/> Test tracks and crash facilities <input type="checkbox"/> Simulators, other simulation facilities, models <input type="checkbox"/> Field and other laboratories <input type="checkbox"/> Databases on transport, traffic and related impacts <input type="checkbox"/> Libraries and literature databases
Owner	VTI Crash Safety Division
Name of the facility	VTI Crashlab
Contact (Name, address, phone, fax, e-mail)	Thomas Turbell VTI SE-581 95 Linköping Ph. +46 13 20 43 69 Fax +46 13 20 40 33 thomas.turbell@vti.se
Short description Maximum 100 words	The crash test facility consists of a 60 m indoor track for full scale vehicle tests as well as tests with different types of sleds. The outdoor track makes it possible to run tests with all types of roadside safety features. It is also used for car-to-car tests.
Unique features Maximum 100 words	Accredited for ECE R44.03, EN1317 and EN12767. Accepted by FHWA, Washington for tests according to NCHRP 230 and 350.
Quantitative data on capacity or capability	Maximum speed is 110 km/h with a 3000 kg vehicle. For car-to- car collisions the 3000 kg may be split between the cars.
Availability for outside use (Yes/no; conditions)	Yes, we are open for all types of contracts.
Typical projects which used the facility in the last 2 years	Roadside safety features according to CEN EN1317 and EN12767. Child safety systems according to ECE R44.03.
Financing of the facility (e.g. lump sum, through projects, dedicated grants, etc)	Through projects.
Comparable facilities in EU	LIER, BAST, TRL, TNO
Plans for further development of this or other research facilities	We plan to expand the outdoor facility to include also tests with heavy vehicles against roadside equipment.

Survey form VTT4

Type of RI: (Tick appropriate box)	<input checked="" type="checkbox"/> Test tracks and crash facilities <input type="checkbox"/> Simulators, other simulation facilities, models <input type="checkbox"/> Field and other laboratories <input type="checkbox"/> Databases on transport, traffic and related impacts <input type="checkbox"/> Libraries and literature databases
Owner	Maritime Research Institute of Finland (VTT Industrial Systems with Helsinki University of Technology)
Name of the facility	Towing tank
Contact (Name, address, phone, fax, e-mail)	Mr. Heikki Helasharju P.O.Box 17051, 02044 VTT, Finland +358-9-456 6222, +358-9-464424, heikki.helasharju@vtt.fi
Short description Maximum 100 words	In the towing tank open water experiments are conducted for surface vessels offshore structures and submersibles. These tests are primarily aimed at evaluating the power requirement, seakeeping and manoeuvring qualities of a vessel.
Unique features Maximum 100 words	
Quantitative data on capacity or capability	Length 130m, width 11m, depth 5.5m. Plunger type wave-maker for regular and irregular seas. Towing carriage maximum speed 8 m/s.
Availability for outside use (Yes/no; conditions)	Negotiable
Typical projects which used the facility in the last 2 years	Resistance and performance prediction tests. Seakeeping tests. PMM tests for evaluation vessel's manoeuvrability. Performance tests for pod propulsion systems.
Financing of the facility (e.g. lump sum, through projects, dedicated grants, etc)	Lump sum & through projects
Comparable facilities in EU	SSPA, Marin, HSV A
Plans for further development of this or other research facilities	Moveable bottom for shallow water experiments.

Survey form VTT5

Type of RI: (Tick appropriate box)	<input checked="" type="checkbox"/> Test tracks and crash facilities <input type="checkbox"/> Simulators, other simulation facilities, models <input type="checkbox"/> Field and other laboratories <input type="checkbox"/> Databases on transport, traffic and related impacts <input type="checkbox"/> Libraries and literature databases
Owner	Maritime Research Institute of Finland (VTT Industrial Systems with Helsinki University of Technology)
Name of the facility	Multipurpose basin
Contact (Name, address, phone, fax, e-mail)	Mr. Heikki Helasharju P.O.Box 17051, 02044 VTT, Finland +358-9-456 6222, +358-9-464424, heikki.helasharju@vtt.fi
Short description Maximum 100 words	In the multipurpose basin open water experiments are conducted for surface vessels offshore structures and submersibles. These tests are primarily aimed at evaluating seekeeping and manoeuvring qualities of a vessel. In the basin also model tests in ice are conducted.
Unique features Maximum 100 words	The basin is also largest ice model basin in the world. Model tests in ice are conducted by Helsinki University of Technology.
Quantitative data on capacity or capability	Length 40m, width 40m, depth 2.8m. Air temperature range +5- -23°C. Large XY carriage for towin or following vessels and srtructures. Plunger-type wavemaker for short crested seas.
Availability for outside use (Yes/no; conditions)	Negotiable
Typical projects which used the facility in the last 2 years	Seekeeping tests in oblique seas. Manoeuvring tests. Harbour design simulations. Ice resistance tests.
Financing of the facility (e.g. lump sum, through projects, dedicated grants, etc)	Lump sum & through projects
Comparable facilities in EU	(MARC, HSVA)
Plans for further development of this or other research facilities	

B.2 Simulators, other simulation facilities, models**Survey form – AVV1**

Type of RI: (Tick appropriate box)	<input type="checkbox"/> Test tracks and crash facilities <input checked="" type="checkbox"/> Simulators, other simulation facilities, models <input checked="" type="checkbox"/> Field and other laboratories <input checked="" type="checkbox"/> Databases on transport, traffic and related impacts <input checked="" type="checkbox"/> Libraries and literature databases
Owner	Department for Public Works and Water Management, AVV Transport Research Centre, Test Centre for Traffic Systems
Name of the facility	Test Centre for Traffic Systems
Contact (Name, address, phone, fax, e-mail)	Rob van der Voort, Kluyverweg 4, 2629 HT DELFT, NL Phone + 31 15 251 7300 Fax + 31 15 251 7399, r.c.vdvoort@avv.rws.minvenw.nl
Short description Maximum 100 words	<p>The Test Centre for Traffic Systems which is located in Delft is a division of the Traffic and Transport Advisory Department (AVV) of the Department of Public Works and Water Management. The Test Centre collaborates with other knowledge institutes and innovation projects with a view to developing and introducing uniform Dynamic Traffic Management Systems. To this end the Traffic and Transport Advisory Department works in close collaboration with the Geometrical Department and other Specialist Departments of the Department of Public Works and Water Management. The Regional Directorates of the Department of Public Works and Water Management are also represented.</p> <p>The mission of the Dutch Ministry of Transport, Public Works and Water Management is 'Reliable water management and advanced route connections'. As a division of the ministry the Test Centre for Traffic Systems concentrates on the second part of this mission: steering traffic and transport in the right direction and creating the conditions for good and improved accessibility.</p> <p>The Test Centre supports the development and realization of traffic control systems and Dynamic Traffic Management Systems. The said support is provided primarily for the various divisions of the Dutch Ministry of Transport, Public Works and Water Management. The users of the services provided by the Test Centre can ask the Test Centre to test new or revised Traffic Systems, to carry out or collaborate on innovative projects, and for information about new developments and training courses for (new) traffic station operators (among others) and how traffic</p>

	systems are operated.
Unique features Maximum 100 words	<ol style="list-style-type: none"> 1. It offers testing facilities for Dynamic Traffic Management Systems, including the control of the testing and reference station. 2. It performs an educational function in offering training course facilities and demonstration facilities. 3. It stages demonstrations and provides information. <p>In support of these three functions the Test Centre manages office, conference, training course and demonstration facilities, including the necessary technical infrastructure.</p>
Quantitative data on capacity or capability	The Test Centre has accommodations for 10 projects the same time. Consultants and technical experts support the test facilities continually.
Availability for outside use (Yes/no; conditions)	There are some test facilities elsewhere in the country, in co-operation with the regional directorates. Please address any questions to Rob van der Voort.
Typical projects which used the facility in the last 2 years	Monitoring (MONICA); Architecture for Traffic Control (AVB); Roads to the Future, innovation programme; innovation projects in cooperation with the Dutch Police and the Public Ministry; Section Control
Financing of the facility (e.g. lump sum, through projects, dedicated grants, etc)	5 million Euro
Comparable facilities in EU	Test Centre for Traffic Systems in Sweden
Plans for further development of this or other research facilities	Road operators laboratory with simulation facilities (planning: 2004)

Survey form – DLR3

Type of RI: (Tick appropriate box)	<input type="checkbox"/> Test tracks and crash facilities <input checked="" type="checkbox"/> Simulators, other simulation facilities, models <input type="checkbox"/> Field and other laboratories <input type="checkbox"/> Databases on transport, traffic and related impacts <input type="checkbox"/> Libraries and literature databases
Owner	DLR German Aerospace Center Institute of Transportation Systems Lilienthalplatz 7 D-38108 Braunschweig, Germany
Name of the facility	Driver assistance systems test lab
Contact (Name, address, phone, fax, e-mail)	DLR German Aerospace Center Institute of Transportation Systems Lilienthalplatz 7 D-38108 Braunschweig, Germany Phone: +49 531 295-34 01 Fax: +49 531 295-34 02 E-Mail: ifs@dlr.de
Short description Maximum 100 words	Facility to evaluate driver assistance functions and systems with respect to usability, safety and user acceptance. The facility consists of three stages: <ol style="list-style-type: none"> 1. Virtual reality lab for rough evaluations at an early concept stage 2. Driving simulator with high quality external view projection and modular variable cockpit layout to evaluate functions in simulated traffic 3. Research vehicle with drive-by-wire capability and modular variable cockpit layout to evaluate functions in real traffic.
Unique features Maximum 100 words	<ul style="list-style-type: none"> • Three-stage approach from VR-lab to research vehicle in real traffic • Modular variable cockpit layout to hold custom displays and/or controls developed by own research or customer
Quantitative data on capacity or capability	?
Availability for outside use (Yes/no; conditions)	YES, under one of the following conditions: <ul style="list-style-type: none"> • To be defined
Typical projects which used the facility in the last 2 years	Site under construction, will be finished end of 2003
Financing of the facility (e.g. lump sum, through projects, dedicated grants, etc)	dedicated grants from ministry and own DLR funding
Comparable facilities in EU	not known
Plans for further development of this or other research facilities	Extension to side-stick control of the vehicle, to be finished in 2005

Survey form – DLR4

Type of RI: (Tick appropriate box)	<input type="checkbox"/> Test tracks and crash facilities <input checked="" type="checkbox"/> Simulators, other simulation facilities, models <input type="checkbox"/> Field and other laboratories <input type="checkbox"/> Databases on transport, traffic and related impacts <input type="checkbox"/> Libraries and literature databases
Owner	DLR German Aerospace Center Institute of Transportation Systems Lilienthalplatz 7 D-38108 Braunschweig
Name of the facility	Laboratory for the Test and Evaluation of Railway Control Systems
Contact (Name, address, phone, fax, e-mail)	DLR German Aerospace Center Institute of Transportation Systems Lilienthalplatz 7 D-38108 Braunschweig Phone: +49 531 295 34 01 Fax: +49 531 295 34 02 E-Mail: ifs@dlr.de
Short description Maximum 100 words	In the laboratory it will be possible to perform Hardware-in-the-loop simulations of train control systems in realtime. Here can be tested: <ul style="list-style-type: none"> • Single components in an simulated environment • Components from one or more manufacturers and their interoperability • The correct behaviour in relation to defined reference-scenarios • The behaviour under stress situation • The behaviour under same scenario (reproduction) • The behaviour under degraded situation • The correctness under European conditions
Unique features Maximum 100 words	<ul style="list-style-type: none"> • Flexible Environment simulation (Train dynamics, track) • Logging units • Scenario definition according to European specifications • Flexible interfaces Later Extensions: <ul style="list-style-type: none"> • Multi-Train simulation • Visualisation in an VR Environment (Driving Simulator)
Quantitative data on capacity or capability	?
Availability for outside use (Yes/no; conditions)	YES, under one of the following conditions: <ul style="list-style-type: none"> • To be defined
Typical projects which used the facility in the last 2 years	Site under construction, will be finished in end of 2003
Financing of the facility (e.g. lump sum, through projects, dedicated grants, etc)	dedicated grants from ministry and own DLR funding
Comparable facilities in EU	EMSET Laboratory (Spain)
Plans for further development of	site under construction, finished end of 2003

this or other research facilities	
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Survey form – FHG

Type of RI: (Tick appropriate box)	<input type="checkbox"/> Test tracks and crash facilities <input checked="" type="checkbox"/> Simulators, other simulation facilities, models <input checked="" type="checkbox"/> Field and other laboratories <input checked="" type="checkbox"/> Databases on transport, traffic and related impacts <input type="checkbox"/> Libraries and literature databases
Owner	Fraunhofer Institute for Transportation and Infrastructure Systems FhG-IVI
Name of the facility	Department of Intermodal Traffic + Transportation Information & Management
Contact (Name, address, phone, fax, e-mail)	Mr. Jörg SCHÜTTE Zeunerstr. 38, 01069 Dresden, Germany phone: +49 (0) 351.4640-801, fax: +49 (0) 351.4640-803 e-mail: schuette@ivi.fhg.de internet: www.ivi.fraunhofer.de
Short description Maximum 100 words	One research and developing department of FhG-IVI focuses on intermodal traffic and transportation information & management systems. Since 10 years the department has gathered continuous growing experiences in developing and engineering of intermodal Telematic systems. The excellent scientific staff is the base for all activities, including analysis, concepts, development, prototyping, realisation, evaluation and operation. Main fields of activities are: <ul style="list-style-type: none"> * Traffic management * Traffic information systems * Intermodal passenger information * Traffic status acquisition * Informational, commercial and legal integration of traffic networks * Electronic ticketing and automatic fare management
Unique features Maximum 100 words	Experiences in developing and realisation of passenger information systems and intermodal traffic & transport management systems. Besides the human resources there are four laboratories: <ul style="list-style-type: none"> * Image Recognition/Processing and Traffic Sensors * Wireless Data Transmission and Communication Technology * Simulation & Timetable-Management * Mobile Information Techniques and Technology (PTA)
Quantitative data on capacity or capability	Scientific Staff: 20 Students / Assistants: 15
Availability for outside use (Yes/no; conditions)	Yes
Typical projects which used the facility in the last 2 years	INTERMOBIL – Intermodal Mobility/Traffic Information System Dresden City-Traffic Bonn – Traffic Simulation, Information

	and Management DIRECT – Continuous Intermodal Routing & Realtime Information DELFI – Continuous Electronic Timetable Information ICARE / CALYPSO – Contactless Electronic Ticketing
Financing of the facility (e.g. lump sum, through projects, dedicated grants, etc)	30 % Public 30 % Industry 30 % Base Financing
Comparable facilities in EU	
Plans for further development of this or other research facilities	Staff increasing New Building / Facilities in Planning

Survey form – HIT5

Type of RI: (Tick appropriate box)	<input type="checkbox"/> Test tracks and crash facilities <input checked="" type="checkbox"/> Simulators, other simulation facilities, models <input type="checkbox"/> Field and other laboratories <input type="checkbox"/> Databases on transport, traffic and related impacts <input type="checkbox"/> Libraries and literature databases
Owner	Centre for Research and Technology Hellas / Hellenic Institute of Transport
Name of the facility	Dynamic driving simulator
Contact (Name, address, phone, fax, e-mail)	Dr. Evangelos BEKIARIS CERTH/HIT 6 th km. Chariolou-Thermi Road 57001 Thermi Greece Tel.:+30-310-498265 Fax:+30-310-498269 E-mail: abek@certh.gr
Short description Maximum 100 words	<p>The driver is seated in a real car. The angle of the frontal view equals 180° and is achieved by three mounted projectors and three planar screens. Three additional planar projections simulate the direct rear view as well as the three mirror views. Vehicle and traffic noise is presented to the driver by a spatial surround sound system, mounted inside the driver's cab. The simulator is equipped with a motion system which simulates both seat and body vibration. Actuators with one degree of freedom, attached to the wheel suspension system allow for the simulation of realistic road-induced motion.</p> <p>The simulator possesses a reconfigurable instrument display and a touch screen at the centre console of the vehicle. An active steering wheel and accelerator, clutch and brake pedals facilitate the simulation of tactile feedbacks.</p>
Unique features Maximum 100 words	<p>A road database of 300 km is available, including city environment, rural roads, motorways and highways. Drivers breaking traffic rules, standard drivers, novice and professional drivers, pedestrians, cyclists, motorcyclists, animals, etc. can be simulated. Various traffic conditions are supported (i.e. fog, snow, rain, night, etc.). A scenario editor allows new traffic scenarios to be programmed. Both front, rear and 4-wheel driving as well as manual and automatic vehicle operation can be simulated.</p>
Quantitative data on capacity or capability	<p>Projections frontal: 3 planar projections with rear mounted projectors. Angle of frontal vision: 180° Projections rear: 3 planar projections for mirror and rear view Motion system: chassis vibration, actuators at wheel</p>

	<p>suspensions with one degree of freedom</p> <p>Sound system: Surround sound, driving and traffic noise</p> <p>Road net:appr. 300 km</p> <p>Road types: Various urban roads, rural roads, motorways, highways</p> <p>Weather / vision: Different daylight/nightlight conditions, rain, fog, snow, ice scenarios</p> <p>Special programs: Front/back/4-wheel drive, automatic/manual transmission</p> <p>Data exchange interface: Bi-directional, TCP/IP, CAN-bus vehicle and traffic data</p> <p>HMI elements: Touch screen, reconfigurable instrument cluster, active steering wheel, accelerator, clutch, brake pedals with haptic feedback</p> <p>Other issues: Adaptable for use by drivers with lower and/or upper limb and/or neck problems. E&D adaptations fitted.</p>
Availability for outside use (Yes/no; conditions)	Yes, upon agreement
Typical projects which used the facility in the last 2 years	<p>New, not used yet.</p> <p>Typical use (for future): Driver drowsiness test – AWAKE project; Elderly drivers behaviour – AGILE project.</p>
Financing of the facility (e.g. lump sum, through projects, dedicated grants, etc)	<p>Dedicated grant from Greek government for set-up.</p> <p>Projects and industrial contracts for further development and maintenance.</p>
Comparable facilities in EU	Driving simulator of IAT in Stuttgart, RUG and TNO in the Netherlands, etc.
Plans for further development of this or other research facilities	Yes, extension of movement base to more DOF's.

Survey form – INRETS 12

Type of RI: (Tick appropriate box)	<input type="checkbox"/> Test tracks and crash facilities <input checked="" type="checkbox"/> Simulators, other simulation facilities, models <input type="checkbox"/> Field and other laboratories <input type="checkbox"/> Databases on transport, traffic and related impacts <input type="checkbox"/> Libraries and literature databases
Owner	INRETS
Name of the facility	Driving simulator
Contact (Name, address, phone, fax, e-mail)	LESCOT laboratory (Lyon-Bron) corinne.brusque@inrets.fr
Short description Maximum 100 words	The driver is seated in a real car. The frontal view is near 50° in horizontal and 30° in vertical. All the interactions between the driver and the car are connected, rearview mirrors are also simulated. The system incorporate the presence of other vehicles along road traffic. These equipments are used for many researches : effects of ageing and deficiencies on different human functions, relations between technological innovation, activity and the necessary training, perceptive aspects, cognitive aspects, evaluation of driving aids (autonomous speed regulation, anti-collision systems, vocal interfaces,...).
Unique features Maximum 100 words	
Quantitative data on capacity or capability	
Availability for outside use (Yes/no; conditions)	Yes
Typical projects which used the facility in the last 2 years	
Financing of the facility (e.g. lump sum, through projects, dedicated grants, etc)	Financing of these infrastructures is obtained through a mix between grants from the government, and from industrial and european projects
Comparable facilities in EU	
Plans for further development of this or other research facilities	

Survey form – INRETS 13

Type of RI: (Tick appropriate box)	<input type="checkbox"/> Test tracks and crash facilities <input checked="" type="checkbox"/> Simulators, other simulation facilities, models <input type="checkbox"/> Field and other laboratories <input type="checkbox"/> Databases on transport, traffic and related impacts <input type="checkbox"/> Libraries and literature databases
Owner	INRETS
Name of the facility	Driving simulator
Contact (Name, address, phone, fax, e-mail)	CIR laboratory (Paris-Arcueil). Contact : pierre.gauriat@inrets.fr
Short description Maximum 100 words	The driver is seated in a real car. The frontal view is more than 50° in horizontal and 30° in vertical. All the interactions between the driver and the car are connected, rearview mirrors are also simulated. The system incorporate the presence of other vehicles along road traffic. These equipments are used for many researches : effects of ageing and deficiencies on different human functions, relations between technological innovation, activity and the necessary training, perceptive aspects, cognitive aspects, evaluation of driving aids (autonomous speed regulation, anti-collision systems, vocal interfaces,...).
Unique features Maximum 100 words	
Quantitative data on capacity or capability	
Availability for outside use (Yes/no; conditions)	Yes
Typical projects which used the facility in the last 2 years	
Financing of the facility (e.g. lump sum, through projects, dedicated grants, etc)	Financing of these infrastructures is obtained through a mix between grants from the government, and from industrial and european projects
Comparable facilities in EU	
Plans for further development of this or other research facilities	

Survey form – INRETS 17

Type of RI: (Tick appropriate box)	<input type="checkbox"/> Test tracks and crash facilities <input checked="" type="checkbox"/> Simulators, other simulation facilities, models <input type="checkbox"/> Field and other laboratories <input type="checkbox"/> Databases on transport, traffic and related impacts <input type="checkbox"/> Libraries and literature databases
Owner	INRETS
Name of the facility	Models
Contact (Name, address, phone, fax, e-mail)	
Short description Maximum 100 words	<p>Many models are developed by INRETS' laboratories. Objectives are varied : economics, safety, environment, traffic, energy,...</p> <p>Some examples are listed in following :</p> <ul style="list-style-type: none"> - safety objectives : to obtain a very accurate representation of the human body, a model is developed by two laboratories (LBA and LBMC) in collaboration with european laboratories (Humos project).Applications are for safety and comfort. - energy objectives : to assess all the possibilities of hybrid vehicles, a model is in permanent development . It integrates all the values concerning thermal engines, electric motors, batteries efficiencies, and the real uses of specific vehicles (cars, delivery vans, buses,..) . Results are the balance for energy and pollutant emissions. - traffic objectives : to evaluate the possibilities of regulated traffic on roads, highways and urban sites , with impact of some specific road signals . Results are optimisation of traffic, including impact of specific lanes reserved to public transport vehicles (buses or trams).Road traffic is also measured by means of image processing, one of the application is the automatic detection of incidents. - environmental objectives : several models to predict the global pollutant emissions or the global noise emission by a traffic. These models include variable as the percentage of cars, trucks,... and speed , and for rail track the frequency of trains. <p>The great advantage of these models is that they are resulting from measurements in laboratories or on sites.</p>
Unique features Maximum 100 words	

Quantitative data on capacity or capability	
Availability for outside use (Yes/no; conditions)	Yes
Typical projects which used the facility in the last 2 years	
Financing of the facility (e.g. lump sum, through projects, dedicated grants, etc)	Financing of these infrastructures is obtained through a mix between grants from the government, and from industrial and european projects
Comparable facilities in EU	
Plans for further development of this or other research facilities	

Survey form – POLITO1

Type of RI: (Tick appropriate box)	<input type="checkbox"/> Test tracks and crash facilities <input checked="" type="checkbox"/> Simulators, other simulation facilities, models <input type="checkbox"/> Field and other laboratories <input type="checkbox"/> Databases on transport, traffic and related impacts <input type="checkbox"/> Libraries and literature databases
Owner	Department of Hydraulic, Transport and civil Infrastructures (DITIC) – POLITECNICO DI TORINO
Name of the facility	MITHRA model
Contact (Name, address, phone, fax, e-mail)	Cristina Pronello C.so Duca degli Abruzzi, n. 24 – 10129 – TORINO – ITALY. Phone: +39 011 5645613. Fax: +39 011 5645699 E-mail: pronello@polito.it
Short description Maximum 100 words	Forecasting model of noise due to road, rail and industrial noise. It is possible to forecast the noise levels emitted by different facilities and to study the noise transmission on the external environment. Noise levels and noise maps are outputs.
Unique features Maximum 100 words	
Quantitative data on capacity or capability	
Availability for outside use (Yes/no; conditions)	We have only one hardware key to run the program, so it is conditioned by our use
Typical projects which used the facility in the last 2 years	We have just now bought the model
Financing of the facility (e.g. lump sum, through projects, dedicated grants, etc)	Project (consulting) financed by external enterprise
Comparable facilities in EU	Soundplan, Predictor
Plans for further development of this or other research facilities	To buy other similar tools (e.g. Predictor) to compare the results obtained with different tools

Survey form – POLITO5

Type of RI: (Tick appropriate box)	<input type="checkbox"/> Test tracks and crash facilities <input checked="" type="checkbox"/> Simulators, other simulation facilities, models <input type="checkbox"/> Field and other laboratories <input type="checkbox"/> Databases on transport, traffic and related impacts <input type="checkbox"/> Libraries and literature databases
Owner	Department of Hydraulic, Transport and civil Infrastructures (DITIC) – POLITECNICO DI TORINO
Name of the facility	Arena
Contact (Name, address, phone, fax, e-mail)	Cristina Pronello C.so Duca degli Abruzzi, n. 24 – 10129 – TORINO – ITALY. Phone: +39 011 5645613. Fax: +39 011 5645699 E-mail: pronello@polito.it
Short description Maximum 100 words	A simulation software by Systems Modeling Corporation based on a discrete, flow oriented modelling language: Siman. Arena enables to the user the uncertainty treatment and the possibility of choosing the appropriate statistical distribution. Besides, with a user friendly animation support, it lets the visualization of the system's behaviour at any time.
Unique features Maximum 100 words	
Quantitative data on capacity or capability	
Availability for outside use (Yes/no; conditions)	
Typical projects which used the facility in the last 2 years	Project for the simulation of user arrivals at stops, network conditions and vehicle movements in Dial a Ride Services funded by MURST
Financing of the facility (e.g. lump sum, through projects, dedicated grants, etc)	Italian Ministry for the University and the Scientific Research (MURST). Funds MURST (ex law 488)
Comparable facilities in EU	
Plans for further development of this or other research facilities	

Survey form – POLITO6

Type of RI: (Tick appropriate box)	<input type="checkbox"/> Test tracks and crash facilities <input checked="" type="checkbox"/> Simulators, other simulation facilities, models <input type="checkbox"/> Field and other laboratories <input type="checkbox"/> Databases on transport, traffic and related impacts <input type="checkbox"/> Libraries and literature databases
Owner	Department of Hydraulic, Transport and civil Infrastructures (DITIC) – POLITECNICO DI TORINO
Name of the facility	MT.MODEL
Short description Maximum 100 words	It is an user friendly and totally integrated system SW tool of mathematical models for decision support to the urban and extraurban traffic and transport planning. It consists of sophisticated multimodal simulation models able to record, compute and display in detail the components which determine the traffic and transport conditions like: OD demand, traffic and transportation supply, flows, times, performances, interaction between demand and supply, environmental impacts, etc
Unique features Maximum 100 words	
Quantitative data on capacity or capability	
Availability for outside use (Yes/no; conditions)	We have 5 keys. Yes, if they are not used in the same time
Typical projects which used the facility in the last 2 years	Educational purposes
Financing of the facility (e.g. lump sum, through projects, dedicated grants, etc)	Italian Ministry for the University and the Scientific Research (MURST)
Comparable facilities in EU	A lot of transport models for transport planning
Plans for further development of this or other research facilities	

Survey form – POLITO7

Type of RI: (Tick appropriate box)	<input type="checkbox"/> Test tracks and crash facilities <input checked="" type="checkbox"/> Simulators, other simulation facilities, models <input type="checkbox"/> Field and other laboratories <input type="checkbox"/> Databases on transport, traffic and related impacts <input type="checkbox"/> Libraries and literature databases
Owner	Department of Hydraulic, Transport and civil Infrastructures (DITIC) – POLITECNICO DI TORINO
Name of the facility	TRIPS
Short description Maximum 100 words	It is an user friendly and totally integrated system SW tool of mathematical models for decision support to the urban and extraurban traffic and transport planning. It consists of sophisticated multimodal simulation models able to record, compute and display in detail the components which determine the traffic and transport conditions like: OD demand, traffic and transportation supply, flows, times, performances, interaction between demand and supply, etc
Unique features Maximum 100 words	
Quantitative data on capacity or capability	
Availability for outside use (Yes/no; conditions)	It is an educational version
Typical projects which used the facility in the last 2 years	Educational purposes
Financing of the facility (e.g. lump sum, through projects, dedicated grants, etc)	Italian Ministry for the University and the Scientific Research (MURST)
Comparable facilities in EU	A lot of transport models for transport planning
Plans for further development of this or other research facilities	

Furthermore:

- TRANUS (TRANSPORT AND LAND-USE MODEL)
- STAN (FREIGHT TRANSPORT MODEL)
- a software linked to HCM manual (Highway Capacity manual)
- a GIS for transport named TAEGIS
- a system for acquisition and analysis of the data (LABVIEW)

Survey form – TNO1

Type of RI: (Tick appropriate box)	<input type="checkbox"/> Test tracks and crash facilities <input checked="" type="checkbox"/> Simulators, other simulation facilities, models <input checked="" type="checkbox"/> Field and other laboratories <input checked="" type="checkbox"/> Databases on transport, traffic and related impacts <input type="checkbox"/> Libraries and literature databases
Owner	TNO
Name of the facility	TNO Centre for Fire Research
Contact (Name, address, phone, fax, e-mail)	Dr.ir. C. Both; head of TNO Centre for Fire Research Lange Kleiweg 5 2288 GH Rijswijk The Netherlands
Short description Maximum 100 words	The Centre for Fire Research is the only scientific research Centre dedicated to Fire Safety in the Netherlands.
Unique features Maximum 100 words	Large furnaces and other test facilities, unique expertise on modelling of fire behaviour, and response of materials and structures to fire; unique expertise for full scale reconstruction and ad-hoc on site testing.
Quantitative data on capacity or capability	Staff of about 30 people, most of them with an academic / university degree.
Availability for outside use (Yes/no; conditions)	Yes, also good connections to training centres for fire brigades in the neighbourhood.
Typical projects which used the facility in the last 2 years	EU projects on tunnel safety (DARTS, FIT, UPTUN) and on structural safety (sponsored by the ECSC: composite steel-concrete; hollow core slabs; ...); reconstruction Volendam fire incident; Benelux-tunnel fire tests; ...
Financing of the facility (e.g. lump sum, through projects, dedicated grants, etc)	Divers
Comparable facilities in EU	
Plans for further development of this or other research facilities	Further development of ad-hoc and on-site testing and training facilities

Survey form – TNO2

Type of RI: (Tick appropriate box)	<input type="checkbox"/> Test tracks and crash facilities <input checked="" type="checkbox"/> Simulators, other simulation facilities, models <input type="checkbox"/> Field and other laboratories <input type="checkbox"/> Databases on transport, traffic and related impacts <input type="checkbox"/> Libraries and literature databases
Owner	TNO Inro (Traffic and Transport) AVV Transport Research Centre
Name of the facility	MIXIC
Contact (Name, address, phone, fax, e-mail)	TNO Inro dr.ir. Bart van Arem P.O. Box 6041 2600 JA Delft The Netherlands T +31 15 269 68 70 F +31 15 269 68 50 bar@inro.tno.nl
Short description Maximum 100 words	MIXIC is a microscopic simulation model that simulates the traffic flow on a road section especially when intelligence functions have been added to vehicles and/or the infrastructure.
Unique features Maximum 100 words	MIXIC is developed to study the effects of intelligent transport systems (either in-vehicle or roadside) that can support or take over driver tasks. Traffic flow, traffic safety and emissions (exhaust and noise) can be studied by means of a detailed simulation of the interaction between the driver, its (intelligent) vehicle, the (intelligent) infrastructure and other vehicles. Components: <ul style="list-style-type: none"> - driver model - vehicle model - vehicle intelligence (Adaptive Cruise Control, Co-operative Following, Co-operative Merging, Early Braking System, Advanced Flow Control and External Speed Control (ESC)) - intelligent infrastructure (ESC and Dynamic Lane Configuration)
Quantitative data on capacity or capability	No capacity limitations since it is a simulation.
Availability for outside use (Yes/no; conditions)	Yes (payment required)
Typical projects which used the facility in the last 2 years	Analysing the effects of ADA systems on traffic flow: <ul style="list-style-type: none"> - For the Dutch Ministry of Transportation and Water Management (AVV Transport Research Centre): Co-operative Following, External Speed Control and Dynamic Lane Configuration - For the EU 5th FP project CarTalk: Co-operative Following, Co-operative Merging, Early Braking System, Advanced Flow Control
Financing of the facility (e.g.	Through projects

lump sum, through projects, dedicated grants, etc)	
Comparable facilities in EU	Several micro-simulation models; see for example www.its.leeds.ac.uk/projects/smartest/deliv6.PDF for an overview
Plans for further development of this or other research facilities	Dependent on forthcoming projects

Survey form – TNO3

Type of RI: (Tick appropriate box)	<input type="checkbox"/> Test tracks and crash facilities <input checked="" type="checkbox"/> Simulators, other simulation facilities, models <input type="checkbox"/> Field and other laboratories <input type="checkbox"/> Databases on transport, traffic and related impacts <input type="checkbox"/> Libraries and literature databases
Owner	TNO Inro (Traffic and Transport)
Name of the facility	ScenarioVerkenner (ScenarioExplorer)
Contact (Name, address, phone, fax, e-mail)	TNO Inro (Traffic and Transport) Dr. Kerry M. Malone P.O. Box 6041 2600 JA Delft The Netherlands T +31 15 269 69 12 F +31 15 269 60 50 Scenarioverkenner@inro.tno.nl
Short description Maximum 100 words	The ScenarioVerkenner is an instrument for analysing long term developments in passenger transport.
Unique features Maximum 100 words	The calculations are based on a scenario approach with use of System Dynamics. Segmentation of mobility is done by means of an aggregated strategic transport demand model. The instrument uses Windows operating system. The prognoses are made on a national level, with a time frame of 15 to 60 years ahead. Index year is currently 1990. See plans for further development below.
Quantitative data on capacity or capability	15-60 years ahead
Availability for outside use (Yes/no; conditions)	Yes. The instrument can be purchased.
Typical projects which used the facility in the last 2 years	<ul style="list-style-type: none"> - EU project SCENES: Long term perspective on transport demand in Europe - Feasibility of urban cars - Environmental perspective on passenger transport modes - Analysis of Public Transport systems and the effect of subsidies
Financing of the facility (e.g. lump sum, through projects, dedicated grants, etc)	Original model development financed by the government and by TNO research funds. Maintenance financed mostly by government. Model improvement financed by various sources, predominantly project-based.
Comparable facilities in EU	To the best of our knowledge the model approach is

	unique.
Plans for further development of this or other research facilities	Plans for updating the base year to 2000, for updating the software and for streamlining and expanding the capability are being discussed at the moment.

Survey form – TNO4

Type of RI: (Tick appropriate box)	<input type="checkbox"/> Test tracks and crash facilities <input checked="" type="checkbox"/> Simulators, other simulation facilities, models <input type="checkbox"/> Field and other laboratories <input type="checkbox"/> Databases on transport, traffic and related impacts <input type="checkbox"/> Libraries and literature databases
Owner	TNO Inro (Logistics and Freight Transport) AVV Transport Research Centre
Name of the facility	SMILE: Strategic Model for Integral Logistics and Evaluation
Contact (Name, address, phone, fax, e-mail)	TNO Inro dr.ir. Lori A. Tavasszy P.O. Box 6041 2600 JA Delft The Netherlands T +31 15 269 68 44 F +31 15 269 68 54 lta@inro.tno.nl
Short description Maximum 100 words	<p>With the SMILE the consequences of global economical and logistic developments can be assessed.</p> <ul style="list-style-type: none"> - economics module: calculates development of regional production and consumption patterns for the long term - trade module: calculates spatial interactions between regions - logistics module: calculates logistic decision-making of forwarders and products based on logistic features of products - transport module: calculates the travel demand and how this can be physically carried out
Unique features Maximum 100 words	This dynamic scenario model calculates the consequences of policy measures for logistic flows in and through The Netherlands in a year-by-year calculation. Logistic decision-making of forwarders and accompanying products is the key factor of this model.
Quantitative data on capacity or capability	<ul style="list-style-type: none"> - economics module: long term up to 35 years - trade module: 40 regions in The Netherlands and 37 regions abroad
Availability for outside use (Yes/no; conditions)	Yes (payment required)
Typical projects which used the facility in the last 2 years	<ul style="list-style-type: none"> - effects of road pricing in the transport sector (by commission of the Dutch Ministry of Transport, Public Works and Water Management - ...

Financing of the facility (e.g. lump sum, through projects, dedicated grants, etc)	
Comparable facilities in EU	
Plans for further development of this or other research facilities	

Survey form – TNO9

Type of RI: (Tick appropriate box)	<input type="checkbox"/> Test tracks and crash facilities <input checked="" type="checkbox"/> Simulators, other simulation facilities, models <input checked="" type="checkbox"/> Field and other laboratories <input type="checkbox"/> Databases on transport, traffic and related impacts <input type="checkbox"/> Libraries and literature databases
Owner	TNO-MEP
Name of the facility	Field equipment: NOx, PM10, SO2, BTX monitors Analytical Laboratories: GC-MS; HPLC; IC; AAS Air pollution dispersion models: CAR: Streetcanyon model; TNO-Traffic: highway traffic model
Contact (Name, address, phone, fax, e-mail)	Dr. M.P. Keuken Department of Environmental Quality P.O. Box 342 7300 AH Apeldoorn +31 55 5493840 (T); +31 55 5493252 (F); keuken@mep.tno.nl
Short description Maximum 100 words	This department is the Dutch expert centre for research on the impact of traffic related air pollution on air quality. We have facilities to sample air pollution, to analyse samples and to model relevant air pollutants. Our expertise dates back from the 1980's and we have been involved in numerous contract research for Dutch authorities a.o. on air pollution surveys, to establish emission factors and to implement Environmental Impact Assessment for road infrastructure.
Unique features Maximum 100 words	Developed regulated models in compliance with the EU daughter directive on NOx and PM10 for both streetcanyons and highways.
Quantitative data on capacity or capability	Number of experts in the department: 40 employees with 15 PhD's and 2 Professors. Total budget 5 Meuro/year.
Availability for outside use (Yes/no; conditions)	Yes; under contract research conditions.
Typical projects which used the facility in the last 2 years	<ul style="list-style-type: none"> • EIA's for Dutch road infrastructure; • Emission factors for PM10, PM2.5, elemental carbon, ultrafines and NOx based upon tunnel measurements; • Traffic contribution to PM in the Netherlands as part of the National Aerosol Programme; • Air pollution surveys • Model development under EU guidelines; • EU projects: HEAVEN and REVEAL
Financing of the facility (e.g. lump sum, through projects, dedicated grants, etc)	15 % dedicated grants; 85% projects
Comparable facilities in EU	
Plans for further development of this or other research facilities	

Survey form – TNO10

Type of RI: (Tick appropriate box)	<input type="checkbox"/> Test tracks and crash facilities <input checked="" type="checkbox"/> Simulators, other simulation facilities, models <input type="checkbox"/> Field and other laboratories <input type="checkbox"/> Databases on transport, traffic and related impacts <input type="checkbox"/> Libraries and literature databases
Owner	TNO Automotive
Name of the facility	MADYMO
Contact (Name, address, phone, fax, e-mail)	TNO Automotive Crash Safety Centre PO Box 6033 2600 JA Delft The Netherlands tel +31 15 269 69 51, fax +31 15 269 77 50, madymo@wt.tno.nl
Short description Maximum 100 words	MADYMO is a software package that allows users to design and optimise occupant safety systems efficiently and effectively. MADYMO is the worldwide standard for occupant safety analysis and simulation. It is used extensively in industrial engineering departments, design offices, research laboratories and technical universities. It has proven itself in numerous applications, often supported by verification studies using experimental test data.
Unique features Maximum 100 words	The development of MADYMO takes place in an environment that is rich in crash safety expertise. TNO has direct access to crash test know-how, and is deeply involved in crash dummy development. This unique combination of resources contributes to the value of MADYMO. As a result, MADYMO offers a database of crash dummies that are validated for a range of applications, and are recognised worldwide of being of superior quality.
Quantitative data on capacity or capability	
Availability for outside use (Yes/no; conditions)	Yes. MADYMO can be leased. TNO consultants can assist using MADYMO.
Typical projects which used the facility in the last 2 years	<ul style="list-style-type: none"> - Full structural side impact study - Compatibility study - Child restraint device evaluation for aircraft - Knee bag simulation - Bus roll-over simulation
Financing of the facility (e.g. lump sum, through projects, dedicated grants, etc)	
Comparable facilities in EU	
Plans for further development of this or other research facilities	Regularly updates.

Survey form – TNO14

Type of RI: (Tick appropriate box)	<input type="checkbox"/> Test tracks and crash facilities <input checked="" type="checkbox"/> Simulators, other simulation facilities, models <input type="checkbox"/> Field and other laboratories <input type="checkbox"/> Databases on transport, traffic and related impacts <input type="checkbox"/> Libraries and literature databases
Owner	TNO Automotive
Name of the facility	ADVANCE – toolbox for the development of integrated intelligent powertrain and chassis control systems
Contact (Name, address, phone, fax, e-mail)	TNO Automotive Advanced Chassis and Transport Systems Powertrains Department PO Box 6033 2600 JA Delft The Netherlands Koert de Kok: tel +31 15 269 74 04, fax +31 15 269 73 14, dekok@wt.tno.nl Jacob Eelkema: tel +31 15 269 60 64, fax +31 15 261 23 41, eelkema@wt.tno.nl
Short description Maximum 100 words	ADVANCE is a toolbox for the development of integrated intelligent powertrain and chassis control systems. ADVANCE allows the user to build vehicle systems and components by using the available predefined powertrain, chassis and control component modules (using Matlab/Simulink). It also includes a visualisation tool.
Unique features Maximum 100 words	<ul style="list-style-type: none"> - Predefined powertrain, chassis and control modules available (validated by measurements) - Capabilities for real-time simulations (Hardware-in-the-loop and Rapid control prototyping) - Possibility for tailor-made modules
Quantitative data on capacity or capability	
Availability for outside use (Yes/no; conditions)	Yes (payment required)
Typical projects which used the facility in the last 2 years	
Financing of the facility (e.g. lump sum, through projects, dedicated grants, etc)	
Comparable facilities in EU	
Plans for further development of this or other research facilities	

Survey form – TNO17

Type of RI: (Tick appropriate box)	<input type="checkbox"/> Test tracks and crash facilities <input checked="" type="checkbox"/> Simulators, other simulation facilities, models <input type="checkbox"/> Field and other laboratories <input type="checkbox"/> Databases on transport, traffic and related impacts <input type="checkbox"/> Libraries and literature databases
Owner	TNO Human Factors
Name of the facility	Moving-base driving simulator
Contact (Name, address, phone, fax, e-mail)	Dr. ir. A.R.A. van der Horst TNO Human Factors P.O. Box 23 3769 ZG Soesterberg The Netherlands T +31 346 356 211 F +31 346 353 977 E vanderhorst@tm.tno.nl
Short description Maximum 100 words	The 'outside world' is projected onto a cylindrical screen using high-resolution projectors. Rearview mirrors are also simulated. The subject in the mock-up receives feedback via the sound and steering forces. The mock-up has a moving base and an active accelerator pedal. The system can incorporate the simulation of up to 40 other vehicles moving independently. A variety of visual conditions, such as day, dusk and night and atmospheric effects can be included.
Unique features Maximum 100 words	
Quantitative data on capacity or capability	
Availability for outside use (Yes/no; conditions)	
Typical projects which used the facility in the last 2 years	
Financing of the facility (e.g. lump sum, through projects, dedicated grants, etc)	
Comparable facilities in EU	
Plans for further development of this or other research facilities	

Survey form – TRL5

Type of RI: (Tick appropriate box)	<input type="checkbox"/> Test tracks and crash facilities <input checked="" type="checkbox"/> Simulators, other simulation facilities, models <input type="checkbox"/> Field and other laboratories <input type="checkbox"/> Databases on transport, traffic and related impacts <input type="checkbox"/> Libraries and literature databases
Owner	TRL Limited
Name of the facility	Numerical simulation facility
Contact (Name, address, phone, fax, e-mail)	Charles Oakley TRL Limited Old Wokingham Road Crowthorne Berkshire RG45 6AU UK +44 1344 770851 (Tel.) +44 1344 770356 (Fax.) coakley@trl.co.uk
Short description Maximum 100 words	The facility comprises state-of-the-art computers (multi-processor high-powered workstations and servers) with industry standard finite element and other simulation software. Codes installed include LS-Dyna, ABAQUS, RADIOSS, PAMCRASH, MADYMO and Hypermesh. The modelling staff comprise experts drawn from a variety of engineering backgrounds including aerospace, defence, automotive and medical. Areas of specialisation include human body modelling (including injury prediction) and impact of structures (crashworthiness).
Unique features Maximum 100 words	The modelling work is intimately integrated with the research groups carrying out broad based research into the same, and related areas. As a result, the modelling work benefits from practical experience of more than 30 years, with consequential confidence and robustness in the simulations. Unique areas of modelling expertise include human body modelling, injury prediction and vehicle impacts with roadside features.
Quantitative data on capacity or capability	Modelling team of 6 staff; hardware currently being upgraded from a 4 processor Silicon Graphics Origin 2000 to latest technology Hewlett Packard machines (commissioning expected in March 2002).
Availability for outside use (Yes/no; conditions)	Yes, subject to usual contractual arrangements.
Typical projects which used the facility in the last 2 years	Modelling of car to car impacts for compatibility research

	Detailed model of the human lower leg Prediction of injuries to train passengers in a crash Crashworthy design of a rail seat Predictions of head injuries sustained in impacts
Financing of the facility (e.g. lump sum, through projects, dedicated grants, etc)	Through Projects
Comparable facilities in EU	Several modelling groups, but unique for human injury modelling.
Plans for further development of this or other research facilities	Investment planned in upgrading hardware and software.

Survey form – TRL6

Type of RI: (Tick appropriate box)	<input type="checkbox"/> Test tracks and crash facilities <input checked="" type="checkbox"/> Simulators, other simulation facilities, models <input type="checkbox"/> <input type="checkbox"/> Field and other laboratories <input type="checkbox"/> Databases on transport, traffic and related impacts <input type="checkbox"/> Libraries and literature databases
Owner	TRL Limited
Name of the facility	Driving Simulation Centre
Contact (Name, address, phone, fax, e-mail)	Andrew Parkes, Head of Driving Simulation Centre TRL, Old Wokingham Road, Crowthorne, Berkshire RG45 6AU, UK +44 1344 770421 Tel +44 1344 770356 Fax aparkes@trl.co.uk
Short description Maximum 100 words	<p>Leading facility in the UK. Full size vehicle, surrounded by screens giving 280 degree field of view. The simulation system provides intelligent vehicles that relate their behaviour to that of the simulator vehicle (within the confines of a described behaviour pattern) or behave as autonomous intelligent vehicles operating collision detection and avoidance</p> <p>The car body is mounted on hydraulic rams that supply motion to simulate the tilt and roll experienced in normal braking, acceleration and cornering. A further ram provides steering force feedback to the driver. The car has simulated engine noise and has external noise of passing traffic and road tyre noise.</p>
Unique features Maximum 100 words	<p>Secure, self-contained facility. 1300 subject database. Home Office approval for storage and distribution of certified drugs. Full medical support facilities. Staff trained in 'best clinical practice'. Separate control room with in-vehicle surveillance facilities.</p> <p>Availability of test routes including motorway, rural and urban scenes. Recent introduction of TRL test track and also local route of 15 miles that have accurate terrain and have photo-realistic landscape and landmarks.</p> <p>Supporting suite of test facilities, including low cost simulators, and validated tests focused on hazard perception, divided attention, adaptive tracking and other measures of fatigue and workload.</p>
Quantitative data on capacity or capability	The car is surrounded by three screens to the front providing 210° horizontal x 40° vertical field of view and one similar sized screen to the rear providing a 70°

	<p>horizontal x 40° vertical field of view, enabling use of all three of the vehicles mirrors.</p> <p>Images are projected onto the screens at resolutions of 1280x1024 pixels for the front channel, and 960x680 pixels for the two side channels and the rear screen. The scene is updated at rates between 30 and 60Hz.</p> <p>The car body is mounted on hydraulic rams that supply motion to simulate the tilt and roll experienced in normal braking, acceleration and cornering. The rams provide; roll, pitch and heave with displacements of $\pm 7^\circ$, $\pm 4^\circ$ and 200mm respectively. The rams are located in the position of the normal car shock absorbers.</p>
Availability for outside use (Yes/no; conditions)	Yes
Typical projects which used the facility in the last 2 years	<p>Investigations of motorway signing and roadworks. Evaluations of new junction designs and traffic calming measures. Assessment of new in-vehicle systems, including Adaptive Cruise Control, Carphones and route navigation systems. Experiments focused on effects on driver of medical and recreational drugs including cannabis and alcohol. Also experiments looking at nutrition and driver fatigue. Evaluations of conspicuity of emergency service vehicles in degraded lighting conditions.</p>
Financing of the facility (e.g. lump sum, through projects, dedicated grants, etc)	Primarily through projects.
Comparable facilities in EU	Renault, Sintef, INRETS and University of Stuttgart.
Plans for further development of this or other research facilities	<p>Development of Truck simulation facility.</p> <p>Introduction of sophisticated night driving simulation capability and development of state of the art sound rendering capability.</p>

Survey form – UPM2

Type of RI: (Tick appropriate box)	<input type="checkbox"/> Test tracks and crash facilities <input checked="" type="checkbox"/> Simulators, other simulation facilities, models <input type="checkbox"/> Field and other laboratories <input type="checkbox"/> Databases on transport, traffic and related impacts <input type="checkbox"/> Libraries and literature databases
Owner	University of Madrid – Transport Research Group
Name of the facility	EMM/2 TRIPS
Contact (Name, address, phone, fax, e-mail)	University of Madrid Transport Department Prof. A. Monzon Ciudad Universitaria s/n 28040 MADRID SPAIN tel +34 91 336 53 73 fax +34 91 549 26 28 e-mail amonzon@dumbo.ca.minos.upm.es
Short description Maximum 100 words	Simulation models for transport demand: OD matrix, traffic flows, interaction between demand and supply etc.
Unique features Maximum 100 words	
Quantitative data on capacity or capability	
Availability for outside use (Yes/no; conditions)	Available for researchers working in co-operation with UPM
Typical projects which used the facility in the last 2 years	European projects (TRANSPRICE, ICARO, PROSPECTS), National projects (Road Network Evaluation)
Financing of the facility (e.g. lump sum, through projects, dedicated grants, etc)	They had been financed through projects and some university budget
Comparable facilities in EU	
Plans for further development of this or other research facilities	

Survey form – VTI6

Type of RI: (Tick appropriate box)	<input type="checkbox"/> Test tracks and crash facilities <input checked="" type="checkbox"/> Simulators, other simulation facilities, models <input type="checkbox"/> Field and other laboratories <input type="checkbox"/> Databases on transport, traffic and related impacts <input type="checkbox"/> Libraries and literature databases
Owner	VTI
Name of the facility	Two lane rural road traffic simulator
Contact (Name, address, phone, fax, e-mail)	Arne Carlsson VTI, SE-581 95 Linköping, Sweden Phone +46 13 204177 Fax: +46 13 141436 E-mail: arne.carlsson@vti.se
Short description Maximum 100 words	Micro simulation system for the description of the traffic process on two-lane rural roads including climbing lanes and broad shoulders. The system is event-driven and implemented in Simula for PC.
Unique features Maximum 100 words	Monte Carlo simulation with a stochastic model for overtaking depending of vehicle type and sight distance. Type of overtaking (flying or accelerated) is also an input in the overtaking model.
Quantitative data on capacity or capability	Data for journey speed/journey time for different vehicle types. Fuel consumption for different vehicle types. Number of overtakings and overtaking ratios for light and heavy vehicles. Proportions of constrained journey time and journey lengths.
Availability for outside use (Yes/no; conditions)	Not without instructions. There is no manual in English.
Typical projects which used the facility in the last 2 years	Effect studies for ITS applications. Impact analysis of increasing proportion of heavy vehicles. Road design at different traffic flows
Financing of the facility (e.g. lump sum, through projects, dedicated grants, etc)	The model is developed by grants from Swedish National Road Administration supplied by VTI internal grants
Comparable facilities in EU	
Plans for further development of this or other research facilities	The model will be modernized and adapted to PC-windows (2002-2003). Event simulation will then be replaced by time-driven simulation and the overall functionality will be extended to handle junctions and multiple lanes.

Survey form – VTI7

Type of RI: (Tick appropriate box)	<input type="checkbox"/> Test tracks and crash facilities <input checked="" type="checkbox"/> Simulators, other simulation facilities, models <input type="checkbox"/> Field and other laboratories <input type="checkbox"/> Databases on transport, traffic and related impacts <input type="checkbox"/> Libraries and literature databases
Owner	Swedish Road and Transport Research Institute (VTI)
Name of the facility	VTI/TPR model – A freight transport forecasting system
Contact (Name, address, phone, fax, e-mail)	Jan R. Eriksson Swedish Road and Transport Research Institute (VTI) 581 95 Linköping
Short description Maximum 100 words	The model is a demand model for forecasting freight transport flows. The model is based on a base year with known freight transport flows and on a known description on the development of the economy up to the forecast year. For the description of the goods flows of the base year, data are needed regarding the transport pattern (to/from relationships), disaggregated into mode and type of product. Economic growth is measured in terms of production, consumption, final use, import and export. All variables are disaggregated into type of industry. The forecasting model also needs other kind of economic statistics.
Unique features Maximum 100 words	The model may be said to consist of three fundamental components: <ul style="list-style-type: none"> • transport pattern in the initial situation • development of the economy up to the forecast year • development of the values of goods
Quantitative data on capacity or capability	Transport statistics are obtained from Statistics Sweden (SCB) and are of relatively good quality. The values of some of the economic variables are also obtained from SCB.
Availability for outside use (Yes/no; conditions)	Yes – but data is needed (can be obtained from the Swedish Institute for Transport and Communications Analysis).
Typical projects which used the facility in the last 2 years	The model is a part of the Swedish national model system for goods transport – SAMGODS, used by the Swedish Institute for Transport and Communications Analysis
Financing of the facility (e.g. lump sum, through projects, dedicated grants, etc)	Through projects
Comparable facilities in EU	See references in the report
Plans for further development of this or other research facilities	Yes, during 2002.

Survey form – VTI8

Type of RI: (Tick appropriate box)	<input type="checkbox"/> Test tracks and crash facilities <input checked="" type="checkbox"/> Simulators, other simulation facilities, models <input type="checkbox"/> Field and other laboratories <input type="checkbox"/> Databases on transport, traffic and related impacts <input type="checkbox"/> Libraries and literature databases
Owner	VTI
Name of the facility	Toll Queue Analysis (TQA)
Contact (Name, address, phone, fax, e-mail)	Pontus Matstoms VTI, SE-581 95 Linköping, Sweden Phone +46 13 204067 Fax: +46 13 141436 E-mail: pontus.matstoms@vti.se
Short description Maximum 100 words	Micro simulation model for capacity analysis of toll stations. The model was developed and implemented 1998-2000 for the toll station of the Öresund link between Sweden and Denmark. It is based on discrete events and facilitates a very detailed description of the particular site with assumptions on physical design as well as driver behaviour. The output includes waiting time in queue, proportion of drivers with queue time etc. Results are also shown by graphical animation.
Unique features Maximum 100 words	It was concluded in 1998 that no similar models could be found on the market.
Quantitative data on capacity or capability	
Availability for outside use (Yes/no; conditions)	Yes, under certain licence conditions.
Typical projects which used the facility in the last 2 years	Design and planning for the Öresund toll station 1998-2000.
Financing of the facility (e.g. lump sum, through projects, dedicated grants, etc)	Financed by the Öresund link operator.
Comparable facilities in EU	
Plans for further development of this or other research facilities	

Survey form – VTI12

Type of RI: (Tick appropriate box)	<input type="checkbox"/> Test tracks and crash facilities <input checked="" type="checkbox"/> Simulators, other simulation facilities, models <input type="checkbox"/> Field and other laboratories <input type="checkbox"/> Databases on transport, traffic and related impacts <input type="checkbox"/> Libraries and literature databases
Owner	VTI
Name of the facility	VTI Driving Simulator VTI Truck Driving Simulator
Contact (Name, address, phone, fax, e-mail)	Staffan Nordmark VTI SE-581 95 Linköping Ph.+46 13 20 41 49 Fax+46 13 14 14 36 staffan.nordmark@vti.se
Short description Maximum 100 words	The driving simulators at VTI are all equipped with large moving bases featuring 7.5 m linear motion. They have been extensively used in international and national projects dealing with vehicle dynamics, human factors, hardware-in-the-loop, virtual reality. A new simulator with improved performance will be put in operation late 2002. A yaw movement is introduced allowing brake pulse and/or platoon driving experiments to be conducted by moving along the linear drive.
Unique features Maximum 100 words	Large linear motion, roll and pitch. Wide angle visual system. Dedicated vibration table. Extremely low transport delays. Extensive validation studies have been performed comparing performance of drivers on the road and in the simulator. Vehicle model validated against several modern passenger cars. Large library of tire data covering all friction levels.
Quantitative data on capacity or capability	Maximum acceleration 0.4g (old systems); 0.8g (new system). Transport delay: 25 ms View angle: 120°x30° Linear motion:+3.75m
Availability for outside use (Yes/no; conditions)	Yes, we are open for all types of contracts.
Typical projects which used the facility in the last 2 years	Vehicle dynamics: Directional stability of passenger cars and trucks. Hardware-in-the-loop: Silent or Noisy ABS. Software-in-the-loop: New drive trains. Human factors: Elderly drivers. Virtual Reality: Design of the Ring Highway system in Stockholm
Financing of the facility (e.g. lump sum, through projects, dedicated grants, etc)	through projects
Comparable facilities in EU	The only comparable simulator in EU is Daimler-Chrysler in Berlin. All others are more or less fixed-base or only very small moving bases: Leeds, TRL, TNO, INRETS

Plans for further development of this or other research facilities	The new Simulator with new moving base will be operative late 2002, and will in many respects be state-of-the-art even worldwide.
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Survey form VTT1

Type of RI: (Tick appropriate box)	<input type="checkbox"/> Test tracks and crash facilities <input checked="" type="checkbox"/> Simulators, other simulation facilities, models <input type="checkbox"/> Field and other laboratories <input type="checkbox"/> Databases on transport, traffic and related impacts <input type="checkbox"/> Libraries and literature databases
Owner	Technical Research Centre of Finland, VTT Processes
Name of the facility	Light-duty vehicle emissions and energy consumption test facility
Contact (Name, address, phone, fax, e-mail)	Juhani Laurikko, +358 9 456 5463, +358 9 460 493 (fax), juhani.laurikko@vtt.fi
Short description Maximum 100 words	Chassis dynamometer facility with CVS-sampling system with for emissions and energy consumption measurements from passenger cars and light-duty trucks.
Unique features Maximum 100 words	<ul style="list-style-type: none"> • Accreditation for type approval testing • Comprehensive analytical instruments for the determination of large number of exhaust pollutants, including extensive on-line analysis on particulates with size distribution. • Test cell ambient temperature can be set between +25...-30 °C. • Close links to laboratories with capabilities for bioassay tests (e.g. AMES)
Quantitative data on capacity or capability	<ul style="list-style-type: none"> • Chassis dyno simulated inertia 500-2500 kg GVW. • Max power absorption 100 kW, max speed 160 km/h. • Windage simulation up to 100 km/h air speed. • Testing in dayshift yields 3-4 tests / working day. • Some 300...400 tests performed annually.
Availability for outside use (Yes/no; conditions)	Yes, available for contracts.
Typical projects which used the facility in the last 2 years	Fuel composition development contracts, assessment of on-road vehicle emissions, assessment of new vehicle emissions incl. exhaust particulates
Financing of the facility (e.g. lump sum, through projects, dedicated grants, etc)	Project based work.
Comparable facilities in EU	Several, but not many with temperature control and this extensive analytical capabilities, especially on particulates
Plans for further development of this or other research facilities	Continue to develop emissions analytics.

Survey form VTT2

Type of RI: (Tick appropriate box)	<input type="checkbox"/> Test tracks and crash facilities <input checked="" type="checkbox"/> Simulators, other simulation facilities, models <input type="checkbox"/> Field and other laboratories <input type="checkbox"/> Databases on transport, traffic and related impacts <input type="checkbox"/> Libraries and literature databases
Owner	Technical Research Centre of Finland, VTT Processes
Name of the facility	Heavy-Duty vehicle emissions and energy consumption test facility
Contact (Name, address, phone, fax, e-mail)	Markku Ikonen, +358 9 456 78 749, +358 9 460 493 (fax), markku.ikonen@vtt.fi
Short description Maximum 100 words	Chassis dynamometer facility with full-flow CVS-sampling system with for emissions and energy consumption measurements from heavy-duty trucks and busses
Unique features Maximum 100 words	Dynamic operation for the simulation of on-road driving with assigned driving schedules. Full-flow CVS sampling for determination of exhaust flow and extensive analytical capabilities for exhaust pollutants, including particulates with on-line size distribution measurements.
Quantitative data on capacity or capability	Single-roller dyno, diameter 2500 mm. Max power absorption 300 kW at wheels. Inertia simulation 2500...30,000 kg GVW
Availability for outside use (Yes/no; conditions)	Yes, available for contracts.
Typical projects which used the facility in the last 2 years	Facility comes fully operative in March 2002.
Financing of the facility (e.g. lump sum, through projects, dedicated grants, etc)	Project based work.
Comparable facilities in EU	
Plans for further development of this or other research facilities	

Survey form VTT3

Type of RI: (Tick appropriate box)	<input type="checkbox"/> Test tracks and crash facilities <input checked="" type="checkbox"/> Simulators, other simulation facilities, models <input type="checkbox"/> Field and other laboratories <input type="checkbox"/> Databases on transport, traffic and related impacts <input type="checkbox"/> Libraries and literature databases
Owner	Technical Research Centre of Finland, VTT Processes
Name of the facility	Heavy-duty engine emissions and energy consumption test facility
Contact (Name, address, phone, fax, e-mail)	Mårten Westerholm, +358 9 456 78 726, +358 9 460 493, Marten.Westerholm@vtt.fi
Short description Maximum 100 words	Dynamic heavy-duty engine emissions and energy consumption test facility
Unique features Maximum 100 words	<ul style="list-style-type: none"> • Dynamic/transient engine dynamometer • Fulfils all EU specifications for legislative testing
Quantitative data on capacity or capability	<ul style="list-style-type: none"> • Max power absorption/motoring 570 kW. • Connection to full-flow CVS for exhaust dilution and sampling • Extensive emissions analytics, incl. particulates and PAH-analysis • Close link to laboratories making bioassay tests (e.g. AMES)
Availability for outside use (Yes/no; conditions)	Yes, available for contracts.
Typical projects which used the facility in the last 2 years	Facility comes fully operative in March 2002.
Financing of the facility (e.g. lump sum, through projects, dedicated grants, etc)	Project based work.
Comparable facilities in EU	Only a few within the industry, and some with public or contract access.
Plans for further development of this or other research facilities	

B.3 Field and other laboratories

Survey form – AVV1

Type of RI: (Tick appropriate box)	<input type="checkbox"/> Test tracks and crash facilities <input checked="" type="checkbox"/> Simulators, other simulation facilities, models <input checked="" type="checkbox"/> Field and other laboratories <input checked="" type="checkbox"/> Databases on transport, traffic and related impacts <input checked="" type="checkbox"/> Libraries and literature databases
Owner	Department for Public Works and Water Management, AVV Transport Research Centre, Test Centre for Traffic Systems
Name of the facility	Test Centre for Traffic Systems
Contact (Name, address, phone, fax, e-mail)	Rob van der Voort, Kluyverweg 4, 2629 HT DELFT, NL Phone + 31 15 251 7300 Fax + 31 15 251 7399, r.c.vdvoort@avv.rws.minvenw.nl
Short description Maximum 100 words	<p>The Test Centre for Traffic Systems which is located in Delft is a division of the Traffic and Transport Advisory Department (AVV) of the Department of Public Works and Water Management. The Test Centre collaborates with other knowledge institutes and innovation projects with a view to developing and introducing uniform Dynamic Traffic Management Systems. To this end the Traffic and Transport Advisory Department works in close collaboration with the Geometrical Department and other Specialist Departments of the Department of Public Works and Water Management. The Regional Directorates of the Department of Public Works and Water Management are also represented.</p> <p>The mission of the Dutch Ministry of Transport, Public Works and Water Management is 'Reliable water management and advanced route connections'. As a division of the ministry the Test Centre for Traffic Systems concentrates on the second part of this mission: steering traffic and transport in the right direction and creating the conditions for good and improved accessibility.</p> <p>The Test Centre supports the development and realization of traffic control systems and Dynamic Traffic Management Systems. The said support is provided primarily for the various divisions of the Dutch Ministry of Transport, Public Works and Water Management. The users of the services provided by the Test Centre can ask the Test Centre to test new or revised Traffic Systems, to carry out or collaborate on innovative projects, and for information about new developments and training courses for (new) traffic</p>

	station operators (among others) and how traffic systems are operated.
Unique features Maximum 100 words	<ol style="list-style-type: none"> 1. It offers testing facilities for Dynamic Traffic Management Systems, including the control of the testing and reference station. 2. It performs an educational function in offering training course facilities and demonstration facilities. 4. It stages demonstrations and provides information. <p>In support of these three functions the Test Centre manages office, conference, training course and demonstration facilities, including the necessary technical infrastructure.</p>
Quantitative data on capacity or capability	The Test Centre has accommodations for 10 projects the same time. Consultants and technical experts support the test facilities continually.
Availability for outside use (Yes/no; conditions)	There are some test facilities elsewhere in the country, in co-operation with the regional directorates. Please address any questions to Rob van der Voort.
Typical projects which used the facility in the last 2 years	Monitoring (MONICA); Architecture for Traffic Control (AVB); Roads to the Future, innovation programme; innovation projects in cooperation with the Dutch Police and the Public Ministry; Section Control
Financing of the facility (e.g. lump sum, through projects, dedicated grants, etc)	5 million Euro
Comparable facilities in EU	Test Centre for Traffic Systems in Sweden
Plans for further development of this or other research facilities	Road operators laboratory with simulation facilities (planning: 2004)

Survey form – CDV2

Type of RI: (Tick appropriate box)	<input type="checkbox"/> Test tracks and crash facilities <input type="checkbox"/> Simulators, other simulation facilities, models <input checked="" type="checkbox"/> Field and other laboratories <input type="checkbox"/> Databases on transport, traffic and related impacts <input type="checkbox"/> Libraries and literature databases
Owner	Transport Research Centre
Name of the facility	Floating Car
Contact (Name, address, phone, fax, e-mail)	Tucka Pavel Líšeňská 33a, 636 00 Brno, Czech Republic +42 5 4321 5050, ext. 202 tucka @cdv.cz
Short description Maximum 100 words	The floating care can be used for selected ways of road technical parameters measurement (e.g. gradient, cross-fall). The floating car is also able to record condition of road including its equipment. It is able to record sight distances. As part of additional equipment it is also possible to measure distances and speed of other vehicles. It is possible to measure momentary speed, acceleration or deceleration of passing vehicles. These recorded values are available for further statistical processing. It follows that it is also possible to measure traffic volume and density.
Unique features Maximum 100 words	<input type="checkbox"/> Adjustment with the nodal system is guaranteed by road division into measured sections which correspond with particular sections of the nodal system. <input type="checkbox"/> Measuring takes place continuously during drive in the real traffic. <input type="checkbox"/> In measured sections, all the measured parameters and the number of the picture in the video camera are recorded after a certain covered distance or after certain time or by manual command. <input type="checkbox"/> Position of vehicle is recorded with the aid of the GPS station.
Quantitative data on capacity or capability	Pilot operation has started
Availability for outside use (Yes/no; conditions)	Yes
Typical projects which used the facility in the last 2 years	Traffic road characteristics collection
Financing of the facility (e.g. lump sum, through projects, dedicated grants, etc)	State research project
Comparable facilities in EU	
Plans for further development of this or other research facilities	Fast record of roads and its traffic signs and equipment

Survey form – CDV5

Type of RI: (Tick appropriate box)	<input type="checkbox"/> Test tracks and crash facilities <input type="checkbox"/> Simulators, other simulation facilities, models <input checked="" type="checkbox"/> Field and other laboratories <input type="checkbox"/> Databases on transport, traffic and related impacts <input type="checkbox"/> Libraries and literature databases
Owner	Transport Research Centre
Name of the facility	gas chromatograph GC 8160
Contact (Name, address, phone, fax, e-mail)	Jiri Huzlik, Dr, Lisenska 33a, 636 00 Brno Tel.: +420 5 41 633 775 Fax.: +420 5 41 633 742 E-mail: huzlik@cdv.cz
Short description Maximum 100 words	The instrument is designed in moduls. The main body is a furnace, in which the measuring capillary is placed. It is usually from 30 up to 100 metres long with inside diameter of several tenth of a milimetre. There are two spraying entries on the furnace body: On Column for direct spraying on column and Split/Splitless for sample spraying with divider. There is a detector placed on the outlet of the capillary. The analysis itself is provided by carrier gas flow and if necessary by gas flow from connected pressure bottles to the detector
Unique features Maximum 100 words	The gas chromatogrph by Fisons is suitable for determination of content of organic pollutant from transport in all sections of enviroment after their isolation from the matrix. They are for example polychlorinated biphenyls, polyaromatic hydrocarbons, non-polar extractable substances, volatile organic substances. The concentrations are determined in the area of trace analysis. This instrument demands highly qualified operators and precise processing of results. It is possible to adjust the gas chromatograph to various measurment techniques by changing the columns, selection of sprayed positions, in some cases by spraying programs in autosampler and methods of detection. The qualified personnel is able to carry out these operations. The company provides free software upgrade.
Quantitative data on capacity or capability	Source voltage: 220 VAC Max. input: 2,2 kW Temperature range: 30°C - 450°C (from -99°C with cryomodul) Temperature growth speed: max 49,9°C/min SW requierements: Windows 3.1, DOS 5.0 HW requierements: 386 AT/PC with coprocessor, 4 Mb RAM, 4 Mb free memory on HDD, RS 232 serial communicational port

	One analyses duration: up to 800 minutes
Availability for outside use (Yes/no; conditions)	yes
Typical projects which used the facility in the last 2 years	Water protection against negative impacts of rail operation
Financing of the facility (e.g. lump sum, through projects, dedicated grants, etc)	Through projects
Comparable facilities in EU	yes
Plans for further development of this or other research facilities	no

Survey form – DLR1

Type of RI: (Tick appropriate box)	<input type="checkbox"/> Test tracks and crash facilities <input type="checkbox"/> Simulators, other simulation facilities, models <input checked="" type="checkbox"/> Field and other laboratories <input type="checkbox"/> Databases on transport, traffic and related impacts <input type="checkbox"/> Libraries and literature databases
Owner	DLR German Aerospace Center Institute for Transport Research Rutherfordstraße 2 D-12489 Berlin, Germany
Name of the facility	Test field for traffic detection devices and measurement of traffic data
Contact (Name, address, phone, fax, e-mail)	Carsten Dalaff DLR German Aerospace Center Institute for Transport Research Rutherfordstraße 2 D-12489 Berlin, Germany Phone: +49 30 67055-205 Fax: +49 30 67055-202 E-Mail: carsten.dalaff@dlr.de
Short description Maximum 100 words	2 km of road to Berlin airport with instrumentation used for/as: <ul style="list-style-type: none"> • generation of traffic data under well known boundary conditions for transport models evaluation (traffic condition reconstruction; traffic forecast and traffic management) • test site for new and advanced instrumentation as well as own developments (vehicle counter, noise detectors, road surface analysis) • test site for development of safety features • test site for verification/evaluation of practical relevance and user friendliness of sensing devices, data acquisition equipment, data evaluation algorithms and final data use
Unique features Maximum 100 words	<ul style="list-style-type: none"> • 50 sensors installed on a road length of more than 2 km for vehicle number, speed, density • all traffic flows on access and exit roads controlled with different mobile and stationary sensors • full-digital and multi-function data collection • measurement of pavement temperature profiles using glass fibre technologies • intelligent video detection devices (under development) • advanced visibility detectors • Weight in Motion Sensor (WIM), using pressure sensors and glass fibre technologies for registration of vehicle gross weight from axle weight • fixed meteorological station, including environmental data
Quantitative data on capacity or capability	?

Availability for outside use (Yes/no; conditions)	YES, under one of the following conditions: <ul style="list-style-type: none">• free data access for partners in project co-operation• free access to data generated under normal day-by-day operation• third party work (payment of additional costs)
Typical projects which used the facility in the last 2 years	Site under construction, will be finished in end of 2002
Financing of the facility (e.g. lump sum, through projects, dedicated grants, etc)	dedicated grants from ministry and own DLR funding
Comparable facilities in EU	not known
Plans for further development of this or other research facilities	site under construction, finished end of 2002

Survey form – DLR2

Type of RI: (Tick appropriate box)	<input type="checkbox"/> Test tracks and crash facilities <input type="checkbox"/> Simulators, other simulation facilities, models <input checked="" type="checkbox"/> Field and other laboratories <input type="checkbox"/> Databases on transport, traffic and related impacts <input type="checkbox"/> Libraries and literature databases
Owner	DLR German Aerospace Center Institute for Transport Research Rutherfordstraße 2 D-12489 Berlin, Germany
Name of the facility	Two Mobile Traffic-Data Laboratories
Contact (Name, address, phone, fax, e-mail)	Carsten Dalaff DLR German Aerospace Center Institute for Transport Research Rutherfordstraße 2 D-12489 Berlin Germany Phone: +49 30 67055-205 Fax: +49 30 67055-202 E-Mail: carsten.dalaff@dlr.de
Short description Maximum 100 words	<p>Two vehicles (vans) are equipped with advanced instrumentation for traffic detection and automatic vehicle recognition for:</p> <ul style="list-style-type: none"> • evaluation and calibration of new stationary and mobile vehicle counting systems, distance measurements etc. • detection of traffic parameters under “floating” conditions • provision of data for traffic model evaluation <p>- Test platform for instrumentation prototypes/demonstrators; - Detection of car park occupancy; - Local measurement of noise as well as gaseous and particulate pollutants; - Evaluation of links between different public transport systems, or between public and private transport systems</p>
Unique features Maximum 100 words	<ul style="list-style-type: none"> • full-digital and multi-function data collection • radar-based distance measurements • 40 m Kamer pylon for stationary measurements with automated video systems • racks for air pollutants measurement instrumentation, to be installed for campaigns • mobile meteorological station • noise measurement
Quantitative data on capacity or capability	
Availability for outside use (Yes/no; conditions)	<p>YES, under one of the following conditions:</p> <ul style="list-style-type: none"> • free data access for partners in project co-

	operation <ul style="list-style-type: none"> • free access to data generated under normal day-by-day operation • third party work (payment of additional costs)
Typical projects which used the facility in the last 2 years	OIS LUMOS
Financing of the facility (e.g. lump sum, through projects, dedicated grants, etc)	DLR budget
Comparable facilities in EU	?
Plans for further development of this or other research facilities	

Survey form – FHG

Type of RI: (Tick appropriate box)	<input type="checkbox"/> Test tracks and crash facilities <input checked="" type="checkbox"/> Simulators, other simulation facilities, models <input checked="" type="checkbox"/> Field and other laboratories <input checked="" type="checkbox"/> Databases on transport, traffic and related impacts <input type="checkbox"/> Libraries and literature databases
Owner	Fraunhofer Institute for Transportation and Infrastructure Systems FhG-IVI
Name of the facility	Department of Intermodal Traffic + Transportation Information & Management
Contact (Name, address, phone, fax, e-mail)	Mr. Jörg SCHÜTTE Zeunerstr. 38, 01069 Dresden, Germany phone: +49 (0) 351.4640-801, fax: +49 (0) 351.4640-803 e-mail: schuette@ivi.fhg.de internet: www.ivi.fraunhofer.de
Short description Maximum 100 words	One research and developing department of FhG-IVI focuses on intermodal traffic and transportation information & management systems. Since 10 years the department has gathered continuous growing experiences in developing and engineering of intermodal Telematic systems. The excellent scientific staff is the base for all activities, including analysis, concepts, development, prototyping, realisation, evaluation and operation. Main fields of activities are: <ul style="list-style-type: none"> * Traffic management * Traffic information systems * Intermodal passenger information * Traffic status acquisition * Informational, commercial and legal integration of traffic networks * Electronic ticketing and automatic fare management
Unique features Maximum 100 words	Experiences in developing and realisation of passenger information systems and intermodal traffic & transport management systems. Besides the human resources there are four laboratories: <ul style="list-style-type: none"> * Image Recognition/Processing and Traffic Sensors * Wireless Data Transmission and Communication Technology * Simulation & Timetable-Management * Mobile Information Techniques and Technology (PTA)
Quantitative data on capacity or capability	Scientific Staff: 20 Students / Assistants: 15
Availability for outside use (Yes/no; conditions)	Yes
Typical projects which used the facility in the last 2 years	INTERMOBIL – Intermodal Mobility/Traffic Information System Dresden City-Traffic Bonn – Traffic Simulation, Information

	and Management DIRECT – Continuous Intermodal Routing & Realtime Information DELFI – Continuous Electronic Timetable Information ICARE / CALYPSO – Contactless Electronic Ticketing
Financing of the facility (e.g. lump sum, through projects, dedicated grants, etc)	30 % Public 30 % Industry 30 % Base Financing
Comparable facilities in EU	
Plans for further development of this or other research facilities	Staff increasing New Building / Facilities in Planning

Survey form – HIT2

Type of RI: (Tick appropriate box)	<input type="checkbox"/> Test tracks and crash facilities <input type="checkbox"/> Simulators, other simulation facilities, models <input checked="" type="checkbox"/> Field and other laboratories <input type="checkbox"/> Databases on transport, traffic and related impacts <input type="checkbox"/> Libraries and literature databases
Owner	Centre for Research and Technology Hellas / Hellenic Institute of Transport
Name of the facility	Internet Portal for Transport applications
Contact (Name, address, phone, fax, e-mail)	Maria P. BOILÉ, Ph.D. CERTH/HIT 6 th km. Chariadou-Thermi Road 57001 Thermi Greece Tel.:+30-310-498262 Fax:+30-310-498269 E-mail: mboile@certh.gr
Short description Maximum 100 words	The Internet portal provides consultancy services to a variety of actors in the transport area. It provides high technology services to small and medium size enterprises, which do not have access to such tools. Services provided through the portal include: <ul style="list-style-type: none"> – Route guidance – On-line vehicle routing – Point-to-point travel times under real time traffic condition – Estimate of the environmental effect of traffic through a dynamic database. The Internet portal offers the following functionalities: <ul style="list-style-type: none"> – Access to information and data available in the portal. – Information on various actors, i.e. transportation companies, private companies offering relevant services, relevant authorities. – Chat service on relevant subjects. – Electronic data exchange, to disseminate such information and promote the system use.
Unique features Maximum 100 words	One stop shop for a variety of data, services, and transportation applications
Quantitative data on capacity or capability	A Geographic Information System (GIS) within the portal offers the following functionalities: <ul style="list-style-type: none"> – Establishment of GIS database for direct access to maps and related data. – Integration in the database of data on public works, in cooperation with relevant authorities. – Analysis of the characteristics of the existing transportation system. – Evaluation of services provided in the framework of specific environmental and historical data. – Statistical analysis.

	<ul style="list-style-type: none"> - Economic analysis. <p>A Global Positioning System, containing dynamic, real time data allows the user to:</p> <ul style="list-style-type: none"> - Estimate traffic flow and density and provide on-line vehicle routing services. - Improve traffic flow with emergency vehicle routing and scheduling in congested areas. - Estimate the contribution of transport sector to the economy of the state, based on traffic flows and numbers of vehicles passing through main road arteries - Promote and support local and national infrastructure works based on the collected data on traffic loads. - Estimate energy autonomy at a national level. - Support research initiatives by providing access to information available in the database. - Maintain accident databases.
Availability for outside use (Yes/no; conditions)	Yes, upon agreement
Typical projects which used the facility in the last 2 years	New, not used yet. Typical use as described above
Financing of the facility (e.g. lump sum, through projects, dedicated grants, etc)	Dedicated grant from Greek government for set-up. Projects and industrial contracts for further development and maintenance.
Comparable facilities in EU	N/A
Plans for further development of this or other research facilities	Yes, development of new applications and provision of additional services.

Survey form – HIT3

Type of RI: (Tick appropriate box)	<input type="checkbox"/> Test tracks and crash facilities <input type="checkbox"/> Simulators, other simulation facilities, models <input checked="" type="checkbox"/> Field and other laboratories <input type="checkbox"/> Databases on transport, traffic and related impacts <input type="checkbox"/> Libraries and literature databases
Owner	Centre for Research and Technology Hellas / Hellenic Institute of Transport
Name of the facility	Photometric and Visibility Laboratory
Contact (Name, address, phone, fax, e-mail)	Maria P. BOILÉ, Ph.D. CERTH/HIT 6 th km. Chariadou-Thermi Road 57001 Thermi Greece Tel.:+30-310-498262 Fax:+30-310-498269 E-mail: mboile@certh.gr
Short description Maximum 100 words	The lab contains a photometric measurement and calibration room, and an unobstructed laboratory space painted completely black to minimize light reflections during lab tests and human factors studies under conditions simulating a night time environment. Experiments simulating perception under various conditions of visibility are conducted, and signing and marking materials are evaluated.
Unique features Maximum 100 words	The lab setup allows the precise measurement and evaluation of retroreflective materials, which are used for signs and marking roads, in safety clothing, and on bicycles and many other objects to improve the chances of being seen during darkness. The lab also studies and measures colour, particularly for the regulation of traffic control devices. A spectroradiometer, which behaves much like the human eye in the sense that it can see the various colours of the visible spectrum is used for precise colour measurements of light sources.
Quantitative data on capacity or capability	Components of the lab include: Three-axis goniophotometer. Double-monochromator spectroradiometer. Various types of Photometer and Colorimeter Calibration equipment
Availability for outside use (Yes/no; conditions)	Yes, upon agreement
Typical projects which used the facility in the last 2 years	New, under development. Typical use (for future): develop recommendations for the specification of materials, both in photometric and colorimetric terms, evaluate transport-related lighting and signing equipment, including automobile headlamps and traffic control devices.
Financing of the facility (e.g.	Dedicated grant from Greek government for set-up.

lump sum, through projects, dedicated grants, etc)	Projects and industrial contracts for further development and maintenance.
Comparable facilities in EU	3M Laboratory facilities, DUSSELDORF
Plans for further development of this or other research facilities	Initial project still under development

Survey form – HIT4

Type of RI: (Tick appropriate box)	<input type="checkbox"/> Test tracks and crash facilities <input type="checkbox"/> Simulators, other simulation facilities, models <input checked="" type="checkbox"/> Field and other laboratories <input type="checkbox"/> Databases on transport, traffic and related impacts <input type="checkbox"/> Libraries and literature databases
Owner	Centre for Research and Technology Hellas / Hellenic Institute of Transport
Name of the facility	A Mobile Transportation Research Laboratory
Contact (Name, address, phone, fax, e-mail)	Maria P. BOILÉ, Ph.D. CERTH/HIT 6 th km. Chariolou-Thermi Road 57001 Thermi Greece Tel.:+30-310-498262 Fax:+30-310-498269 E-mail: mboile@certh.gr
Short description Maximum 100 words	Research vehicle with the following capabilities: <ul style="list-style-type: none"> – Cheap, practical, reliable, and less time consuming alternative to static sensor deployment projects. – Allows researchers to collect traffic data at any point needed in the transportation network without any major financial and time investments. – Allows testing of new sensors under various traffic conditions. – Allow participation in major transportation deployment projects since it helps to collect very accurate data for a fraction of cost and time needed by today's systems.
Unique features Maximum 100 words	The mobile lab has the following features: <ul style="list-style-type: none"> – It is housed in a small trailer that can be towed by a car or truck, or into a modified, custom made four-wheel-drive or van. – It has a telescopic mounting unit that will be used to attach any kind of traffic sensor including a camera, RTMS, Passive Acoustic, and others. The system is designed to accommodate more than one type of sensor. – It has batteries and a solar panel which are used to power the system. – It has a wireless communication modem (CDPD) and antenna which allows the unit to communicate with the desired data collection / processing unit. – It has one Pentium 5 processing unit (with docking station) that stores and processes the

	<p>collected data. The computer also allows implementation of some traffic control strategies that need to use on-line data.</p> <ul style="list-style-type: none"> – It has a Mid-Tech DGPS global positioning system and ESRI ArcVIEW GIS software. – It has a National Instruments high-speed multi-channel data acquisition system and a robust Coastal Environmental roof-mounted weather station. – It has a sound level sensor and air pollution monitoring devices.
Quantitative data on capacity or capability	<p>The laboratory is designed to operate in two distinct modes:</p> <ol style="list-style-type: none"> 1. Remote, fixed position mode. It measures site-specific data including traffic volumes and weather conditions. A weight-in-motion unit may also be used in this mode along with vehicle classification counts. 2. Mobile, roving mode. A variety of sensors is used in this mode for roadway environment condition and data mapping. GPS coordinate and time stamping of acquired data permit association of gathered data with location. Examples of this operational mode include surface roughness or reflectivity studies and logging of highway surface or roadside features. Inter-vehicle fleet communication as well as roadside-to-vehicle communications research, development and testing projects are possible. <p>In addition to the fixed and mobile research modes, the platform may serve as a technology demonstration unit for technology transfer outreach activities.</p>
Availability for outside use (Yes/no; conditions)	Yes, upon agreement
Typical projects which used the facility in the last 2 years	New, under development
Financing of the facility (e.g. lump sum, through projects, dedicated grants, etc)	Dedicated grant from Greek government for set-up. Projects and industrial contracts for further development and maintenance.
Comparable facilities in EU	N/A
Plans for further development of this or other research facilities	Yes, equip the vehicle with new sensors as they become available.

Survey form – HIT6

Type of RI: (Tick appropriate box)	<input type="checkbox"/> Test tracks and crash facilities <input type="checkbox"/> Simulators, other simulation facilities, models <input checked="" type="checkbox"/> Field and other laboratories <input type="checkbox"/> Databases on transport, traffic and related impacts <input type="checkbox"/> Libraries and literature databases
Owner	Centre for Research and Technology Hellas / Hellenic Institute of Transport
Name of the facility	Virtual Reality Lab for Transport applications
Contact (Name, address, phone, fax, e-mail)	Dr. Evangelos BEKIARIS CERTH/HIT 6 th km. Chariolou-Thermi Road 57001 Thermi Greece Tel.:+30-310-498265 Fax:+30-310-498269 E-mail: abek@certh.gr
Short description Maximum 100 words	Single-wall CAVE system, based upon PCs. Easily expandable to a 2-3 or even 6-wall system. For spatial tracking, optical or electromagnetic tracking systems are used, depending on the application. Both wireless and wired input devices can be connected. Each projector has 1800 ANSI resolution and polarised lightweight glasses. The system is driven by two high-end PC-workstations. A number of input devices are available. Also, an optical (wireless) head tracking, magnetic tracking for the hand and a pair of manual interaction devices are installed.
Unique features Maximum 100 words	The system can be used in cooperation with the CAD-Human Model the VIRTUAL ANTHROPOS s/w. This has been successfully used in cooperation with RAMSIS, in many ergonomical studies of vehicle interiors, i.e. IN-ARTE (TR4014), SAVE (TR1047) projects.
Quantitative data on capacity or capability	The VE s/w installed can: <ul style="list-style-type: none"> – cooperate with the interaction devices; – do the visual rendering in correct 1:1 scale stereoscopy; – read the most popular polygonal file formats; – enable the interface to E&D data; – enable interactive cut-plane through data; – enable interactive handling of scenes and objects; – support the necessary measurement tools; – enable to document whole test sessions; – enable to extract interactive 2D snapshots from 3D scenes; – enable the use of interactive markers; – support the conversion of results to intranet documents;

	<ul style="list-style-type: none"> – read interactions and animations from VRML files; – include 3D user interface to control animation in real time; – enable interactive control of multiple light sources; – support interactive comparison of styling models; – allow interface to C++ or Java for addition of new modules; – support script for application development.
Availability for outside use (Yes/no; conditions)	Yes, upon agreement
Typical projects which used the facility in the last 2 years	New, not used yet. Typical use (for future): Check of vehicle design and ergonomics, optimum location of ADAS in vehicles interior, VIEW project applications.
Financing of the facility (e.g. lump sum, through projects, dedicated grants, etc)	Dedicated grant from Greek government for set-up. Projects and industrial contracts for further development and maintenance.
Comparable facilities in EU	Single wall system of Fraunhofer, IAO (the old one, the new has 6 walls), system of COAT-Basel (Switzerland), etc.
Plans for further development of this or other research facilities	Yes, extension to a three- and later six-walls system.

Survey form- HIT7

Type of RI: (Tick appropriate box)	<input type="checkbox"/> Test tracks and crash facilities <input type="checkbox"/> Simulators, other simulation facilities, models <input checked="" type="checkbox"/> Field and other laboratories <input type="checkbox"/> Databases on transport, traffic and related impacts <input type="checkbox"/> Libraries and literature databases
Owner	Centre for Research and Technology Hellas / Hellenic Institute of Transport
Name of the facility	Telematics-equipped test vehicle
Contact (Name, address, phone, fax, e-mail)	Dr. Evangelos BEKIARIS CERTH/HIT 6 th km. Chariolou-Thermi Road 57001 Thermi Greece Tel.:+30-310-498265 Fax:+30-310-498269 E-mail: abek@certh.gr
Short description Maximum 100 words	Research vehicle, equipped with a broad range of sensors and telematic systems, all integrated in an open architecture, allowing the further and modular extension of its sensors.
Unique features Maximum 100 words	The first and foremost specification for HIT's research vehicle is to be able to support multiple CAN-bus architectures, so that sensors and actuators from various manufacturers can be integrated.
Quantitative data on capacity or capability	The sensors integrated are: <ul style="list-style-type: none"> – black-box recorder with basic vehicle inputs (i.e. speed, acceleration, braking, steering output at any given time); – frontal laser sensor; – blind-spot coverage external mirror sensor; – parking support system(s) (radar sensor and/or camera); – automotive display(s); – navigation system; – lane recognition camera; – driver face looking camera, used also (if possible) for driver eye-lid movements monitoring; – visual and audio human interfaces; – brake and gas control actuators (for haptic warnings); – steering grip force measuring sensor; – system to record driver physiological measurements [especially electroencephalogram (EEG) and electrooculogram (EOG)]; – GPS antenna.
Availability for outside use (Yes/no; conditions)	Yes, upon agreement
Typical projects which used the facility in the last 2 years	New, not used yet. Typical use (for future): Tests with various ADAS on

	the road.
Financing of the facility (e.g. lump sum, through projects, dedicated grants, etc)	Dedicated grant from Greek government for set-up. Projects and industrial contracts for further development and maintenance.
Comparable facilities in EU	Test vehicles of TNO (ICACAD), CNRS-LAAS (COPITECH), etc.
Plans for further development of this or other research facilities	Yes, constant addition of new ADAS.

Survey form – INRETS 6

Type of RI: (Tick appropriate box)	<input type="checkbox"/> Test tracks and crash facilities <input type="checkbox"/> Simulators, other simulation facilities, models <input checked="" type="checkbox"/> ...Field and other laboratories <input type="checkbox"/> Databases on transport, traffic and related impacts <input type="checkbox"/> Libraries and literature databases
Owner	INRETS
Name of the facility	Ergonomic Design Seat
Contact (Name, address, phone, fax, e-mail)	LBMC laboratory (Lyon-Bron) jean-pierre.verriest@inrets.fr
Short description Maximum 100 words	To assess the best position of the driver with the possibilities to attain all the pedals and buttons in a vehicle (description of all the sizes of different people). This equipment is used for the comfort and for the safety.
Unique features Maximum 100 words	
Quantitative data on capacity or capability	
Availability for outside use (Yes/no; conditions)	Yes
Typical projects which used the facility in the last 2 years	
Financing of the facility (e.g. lump sum, through projects, dedicated grants, etc)	Financing of these infrastructures is obtained through a mix between grants from the government, and from industrial and european projects
Comparable facilities in EU	
Plans for further development of this or other research facilities	

Survey form – INRETS 7

Type of RI: (Tick appropriate box)	<input type="checkbox"/> Test tracks and crash facilities <input type="checkbox"/> Simulators, other simulation facilities, models <input checked="" type="checkbox"/> Field and other laboratories <input type="checkbox"/> Databases on transport, traffic and related impacts <input type="checkbox"/> Libraries and literature databases
Owner	INRETS
Name of the facility	Roller Test Bench
Contact (Name, address, phone, fax, e-mail)	LTE laboratory (Lyon-Bron) jacques.beaumont@inrets.fr
Short description Maximum 100 words	A 1.20 m in diameter roller test bench, equipped with an electronically controlled electric generator to simulate positive or negative slopes. It permits to drive specific and representative operating cycles for cars weighing up to 3.5 tonnes and to monitor the pollutants (CO, HC, NOx, PM, no-regulated pollutants) and the fuel consumption. The maximum speed is 160 kph. Many experiments are made in co-operation with European laboratories to establish emission factors by vehicles.
Unique features Maximum 100 words	
Quantitative data on capacity or capability	
Availability for outside use (Yes/no; conditions)	Yes
Typical projects which used the facility in the last 2 years	
Financing of the facility (e.g. lump sum, through projects, dedicated grants, etc)	Financing of these infrastructures is obtained through a mix between grants from the government, and from industrial and european projects
Comparable facilities in EU	
Plans for further development of this or other research facilities	

Survey form – INRETS 8

Type of RI: (Tick appropriate box)	<input type="checkbox"/> Test tracks and crash facilities <input type="checkbox"/> Simulators, other simulation facilities, models <input checked="" type="checkbox"/> Field and other laboratories <input type="checkbox"/> Databases on transport, traffic and related impacts <input type="checkbox"/> Libraries and literature databases
Owner	INRETS
Name of the facility	Engine Test Bench
Contact (Name, address, phone, fax, e-mail)	LTE laboratory (Lyon-Bron) jacques.beaumont@inrets.fr
Short description Maximum 100 words	<p>This engine test bench is equipped for high precision consumption and pollutants measurements. The maximum power is 130 kW, and with electronically system , it's possible to reproduce all the transient cycles as in actual use of vehicles.</p> <p>Results are used to compare different engines and technologies (i.e. direct injection for diesel, or new catalytic systems) and to evaluate new architectural drive lines for hybrid vehicles.</p>
Unique features Maximum 100 words	
Quantitative data on capacity or capability	
Availability for outside use (Yes/no; conditions)	Yes
Typical projects which used the facility in the last 2 years	
Financing of the facility (e.g. lump sum, through projects, dedicated grants, etc)	Financing of these infrastructures is obtained through a mix between grants from the government, and from industrial and european projects
Comparable facilities in EU	
Plans for further development of this or other research facilities	

Survey form – INRETS 9

Type of RI: (Tick appropriate box)	<input type="checkbox"/> Test tracks and crash facilities <input type="checkbox"/> Simulators, other simulation facilities, models <input checked="" type="checkbox"/> Field and other laboratories <input type="checkbox"/> Databases on transport, traffic and related impacts <input type="checkbox"/> Libraries and literature databases
Owner	INRETS
Name of the facility	Electronic Test Bench
Contact (Name, address, phone, fax, e-mail)	LTN laboratory gerard.coquery@inrets.fr
Short description Maximum 100 words	In many rail –or road , transport vehicles, electronic powerful systems are used, for instance to control or to convert the electric energy. The LTN laboratory has to test these components in real ambient conditions , especially with temperature and with very variable energy levels. A specific bench is in place (Paris-Arcueil).All the major company in rail or road vehicles are connected with this laboratory.
Unique features Maximum 100 words	
Quantitative data on capacity or capability	
Availability for outside use (Yes/no; conditions)	Yes
Typical projects which used the facility in the last 2 years	
Financing of the facility (e.g. lump sum, through projects, dedicated grants, etc)	Financing of these infrastructures is obtained through a mix between grants from the government, and from industrial and european projects
Comparable facilities in EU	
Plans for further development of this or other research facilities	

Survey form – INRETS 10

Type of RI: (Tick appropriate box)	<input type="checkbox"/> Test tracks and crash facilities <input type="checkbox"/> Simulators, other simulation facilities, models <input checked="" type="checkbox"/> Field and other laboratories <input type="checkbox"/> Databases on transport, traffic and related impacts <input type="checkbox"/> Libraries and literature databases
Owner	INRETS
Name of the facility	Fuel Cell laboratory for transport applications
Contact (Name, address, phone, fax, e-mail)	LTN laboratory gerard.coquery@inrets.fr and francois.badin@inrets.fr
Short description Maximum 100 words	In connection with Universities of Nancy and Belfort and major industries, INRETS is developing a laboratory to study the integration of fuel cells in transport applications. Objectives are not to study the interior of the stack but to evaluate and measure all the impacts on the stack from the needs of power to move a vehicle (i.e. increase of the temperature, cooling,...quick evolution of voltages or of electric intensity,..).
Unique features Maximum 100 words	
Quantitative data on capacity or capability	
Availability for outside use (Yes/no; conditions)	Yes
Typical projects which used the facility in the last 2 years	
Financing of the facility (e.g. lump sum, through projects, dedicated grants, etc)	Financing of these infrastructures is obtained through a mix between grants from the government, and from industrial and european projects
Comparable facilities in EU	
Plans for further development of this or other research facilities	

Survey form – INRETS 11

Type of RI: (Tick appropriate box)	<input type="checkbox"/> Test tracks and crash facilities <input type="checkbox"/> Simulators, other simulation facilities, models <input checked="" type="checkbox"/> Field and other laboratories <input type="checkbox"/> Databases on transport, traffic and related impacts <input type="checkbox"/> Libraries and literature databases
Owner	INRETS
Name of the facility	Test wheel
Contact (Name, address, phone, fax, e-mail)	
Short description Maximum 100 words	Situated at Grenoble, this wheel , 13 m. in diameter permits carrying out railway and road driving tests to study dynamic behaviour, resistance and rolling noise for tyres.
Unique features Maximum 100 words	
Quantitative data on capacity or capability	
Availability for outside use (Yes/no; conditions)	Yes
Typical projects which used the facility in the last 2 years	
Financing of the facility (e.g. lump sum, through projects, dedicated grants, etc)	Financing of these infrastructures is obtained through a mix between grants from the government, and from industrial and european projects
Comparable facilities in EU	
Plans for further development of this or other research facilities	

Survey form – INRETS 14

Type of RI: (Tick appropriate box)	<input type="checkbox"/> Test tracks and crash facilities <input type="checkbox"/> Simulators, other simulation facilities, models <input checked="" type="checkbox"/> Field and other laboratories <input type="checkbox"/> Databases on transport, traffic and related impacts <input type="checkbox"/> Libraries and literature databases
Owner	INRETS
Name of the facility	Instrumented Cars
Contact	
Short description Maximum 100 words	<p>INRETS uses instrumented cars for several objectives :</p> <ul style="list-style-type: none"> - environmental objectives : to know the real use of passenger-cars, buses, trucks, delivery vans...by the use of black boxes with many sensors to monitor all the parameters (speed, length of distance, cold start – very important for pollutant emission and fuel consumption, ...). These results permit to establish real driving cycles to compare and evaluate technologies possibilities to reduce pollution and fuel consumption - ergonomic objectives : to evaluate the quality and the real impact of new systems to help the driver (guidance screen, vocal information,) - safety objectives : to evaluate the real impact of new technologies on the driving behaviour (as ABS, or ESP ,...or ITS systems) and to test the dynamic behaviour of the vehicle-driver interaction. - safety objectives : to test the quality of automatic driving help (automatic braking , detection of vehicles in front,...) and the response of the drivers (physiological parameters). <p>For these experiments, two strategies are applied : some vehicles have a very important equipment and they are specific for one study, and on the other hand, for studies on the real use of vehicles, mobile black boxes that one transfers from one vehicle to another vehicle.</p> <p>Many experiments are made in cooperation with car-makers, european laboratories and local or national authorities.</p>
Unique features Maximum 100 words	
Quantitative data on capacity or capability	
Availability for outside use (Yes/no; conditions)	Yes
Typical projects which used the facility in the last 2 years	
Financing of the facility (e.g. lump sum, through projects, dedicated grants, etc)	Financing of these infrastructures is obtained through a mix between grants from the government, and from industrial and european projects

Comparable facilities in EU	
Plans for further development of this or other research facilities	

Survey form – INRETS 15

Type of RI: (Tick appropriate box)	<input type="checkbox"/> Test tracks and crash facilities <input type="checkbox"/> Simulators, other simulation facilities, models <input checked="" type="checkbox"/> Field and other laboratories <input type="checkbox"/> Databases on transport, traffic and related impacts <input type="checkbox"/> Libraries and literature databases
Owner	INRETS
Name of the facility	Evaluation environmental laboratory (noise)
Contact (Name, address, phone, fax, e-mail)	jacques.beaumont@inrets.fr.
Short description Maximum 100 words	To evaluate the effect of noise by road or rail traffic on human people. In a room as in a house, one reproduces the noise (levels and frequencies) as coming from a road or a rail track, and add through the window the view of the vehicles or of the trains. The noise levels will include also the Doppler effect. (operational in 2002).
Unique features Maximum 100 words	
Quantitative data on capacity or capability	
Availability for outside use (Yes/no; conditions)	Yes
Typical projects which used the facility in the last 2 years	
Financing of the facility (e.g. lump sum, through projects, dedicated grants, etc)	Financing of these infrastructures is obtained through a mix between grants from the government, and from industrial and european projects
Comparable facilities in EU	
Plans for further development of this or other research facilities	

Survey form – KTI1

Type of RI: (Tick appropriate box)	<input type="checkbox"/> Test tracks and crash facilities <input type="checkbox"/> Simulators, other simulation facilities, models <input checked="" type="checkbox"/> <u>Field and other laboratories</u> <input type="checkbox"/> Databases on transport, traffic and related impacts <input type="checkbox"/> Libraries and literature databases
Owner	Institute for Transport Sciences (KTI)
Name of the facility	Department for Automotive Engine and Exhaust Emission Technology Research facility for vehicle emissions and fuel consumption testing
Contact (Name, address, phone, fax, e-mail)	Dr. Tamás MERÉTEI head of department Phone: 36-1-371 5848 Fax: 36-1-205-5897
Short description Maximum 100 words	Emission testing and certification of passenger cars and heavy-duty engines Accreditations to perform tests according the EU and UN/ECE type approvals
Unique features Maximum 100 words	Climatic test room for passenger cars with controlled ambient temperatures between -20°C and $+20^{\circ}\text{C}$ for driving cycle tests. Twin roller EC dynamometer with max. speed of 180 km/h CVS dilution and sampling in bags, exhaust gas analysers for CO, THC, NO _x , CO ₂ and O ₂ ; EC-engine test benches for heavy duty and small size engines.
Quantitative data on capacity or capability	The staff consists of 7 engineers and 5 technicians, all of them having world-wide experiences in R and D services. The quality system complies with the requirements of ISO 9001 and 14001.
Availability for outside use (Yes/no; conditions)	On the field of research and development, expert consultant services.
Typical projects which used the facility in the last 2 years	Development of a lean-burn CNG fuelled engine for city buses. Field test of retrofit catalyts. Development of catalyts for two-stroke engines
Financing of the facility (e.g. lump sum, through projects, dedicated grants, etc)	Usually and mainly by R and D projects
Comparable facilities in EU	VTT in Finland TNO in the Netherlands EMPA in Switzerland INRETS in France
Plans for further development of this or other research facilities	Computerised data logging system. Modal analysis of driving cycle measurements.

Survey form – KT12

Type of RI: (Tick appropriate box)	<input type="checkbox"/> Test tracks and crash facilities <input type="checkbox"/> Simulators, other simulation facilities, models <input checked="" type="checkbox"/> <u>Field and other laboratories</u> <input type="checkbox"/> Databases on transport, traffic and related impacts <input type="checkbox"/> Libraries and literature databases
Owner	Ministry of Transport and Water
Name of the facility	Institute for Transport Sciences Ltd. Environmental Protection and Acoustics Division Acoustical Laboratory
Contact (Name, address, phone, fax, e-mail)	Dr. Maria Bite H-1119 Budapest Than Karoly u.3-5. Phone:+36-1-371-5936 FAX: +36-1-205-5892 E-mail: bite@kti.hu
Short description Maximum 100 words	Noise-, vibration-, water- and soil-protection Calculation and evaluation of air immission for road and motorway investments Environmental impact assesment Investigation of elements of natural and built environment, preparation of measurements Operation of monitoring system alongside motorways
Unique features Maximum 100 words	The scope of the activity of Acoustical Laboratory (accredited by the Hungarian Accreditation Board) Noise and vibration measurements and developments: vehicle components acoustical absorbent materials and constructions noise barriers, building constructions Measurements of noise and vibration emission Type approval of road vehicles according to the European regulations Noise mapping
Quantitative data on capacity or capability	5 persons
Availability for outside use (Yes/no; conditions)	YES
Typical projects which used the facility in the last 2 years	Assigning noise protecting area around airports Preliminary and detailed environmental impact studies Environmental type approval of road vehicles and propeller driven aeroplanes with mass up to 9000 kg Noise protection of environment loaded permanently above the limit Environmental monitoring systems: planning, managing
Financing of the facility (e.g. lump sum, through projects, dedicated grants, etc)	
Comparable facilities in EU	
Plans for further development of this or other research facilities	

Survey form – POLITO2

Type of RI: (Tick appropriate box)	<input type="checkbox"/> Test tracks and crash facilities <input type="checkbox"/> Simulators, other simulation facilities, models <input checked="" type="checkbox"/> Field and other laboratories <input type="checkbox"/> Databases on transport, traffic and related impacts <input type="checkbox"/> Libraries and literature databases
Owner	Laboratory for Civil Engineering of the II Faculty of Engineering of POLITECNICO DI TORINO
Name of the facility	Environmental noise monitoring for external sites
Contact (Name, address, phone, fax, e-mail)	Cristina Pronello C.so Duca degli Abruzzi, n. 24 – 10129 – TORINO – ITALY. Phone: +39 011 5645613. Fax: +39 011 5645699 E-mail: pronello@polito.it
Short description Maximum 100 words	This instrumentation can be used either in external environments or in internal ones and, normally it is used for the noise monitoring of different facilities (roads, highways, railways, industrial plants). It is composed by a sonometer (Larson&Davis 824) equipped with external tools (protection against meteorological events) and a battery for long acquisitions. It has a great acquisition capacity (a micro-computer to increase the memory) and a system to download periodically the data. The software NoiseWork complete the instrumentation and it allows for the data analysis.
Unique features Maximum 100 words	
Quantitative data on capacity or capability	
Availability for outside use (Yes/no; conditions)	Yes, if it is not used for some internal projects
Typical projects which used the facility in the last 2 years	Before the last two years in a project funded by Italian Ministry for the University and the Scientific Research (MURST). In the last two years it has been used for internal projects and for thesis.
Financing of the facility (e.g. lump sum, through projects, dedicated grants, etc)	Internal funds of the II Faculty for the laboratory for students and thesists of Civil Engineering course
Comparable facilities in EU	All the instrumentation for noise measurements and monitoring
Plans for further development of this or other research facilities	To buy other sonometers to carry out measurements and monitoring in different sites in a contemporary way.

Survey form – POLITO3

Type of RI: (Tick appropriate box)	<input type="checkbox"/> Test tracks and crash facilities <input type="checkbox"/> Simulators, other simulation facilities, models <input checked="" type="checkbox"/> Field and other laboratories <input type="checkbox"/> Databases on transport, traffic and related impacts <input type="checkbox"/> Libraries and literature databases
Owner	Laboratory for Civil Engineering of the II Faculty of Engineering and DITIC of POLITECNICO DI TORINO
Name of the facility	Symphonie (two channels)
Contact (Name, address, phone, fax, e-mail)	Cristina Pronello C.so Duca degli Abruzzi, n. 24 – 10129 – TORINO – ITALY. Phone: +39 011 5645613. Fax: +39 011 5645699 E-mail: pronello@polito.it
Short description Maximum 100 words	This instrumentation can be used either in external environments or in internal ones and, normally it is used for the noise monitoring of different facilities (roads, highways, railways, industrial plants). It is composed by a portable PC having a PCMCIA card where the hardware (Symphonie) is connected. This hardware is the acquisition system and it has two channels (two microphones or one microphone and one accelerometer can be connected). We have one microphone and two accelerometers (and a calibrator) The software for the data analysis completes the instrumentation.
Unique features	
Quantitative data on capacity or capability	
Availability for outside use (Yes/no; conditions)	Yes, if it is not used for some internal projects
Typical projects which used the facility in the last 2 years	Before the last two years in a project funded by Italian Ministry for the University and the Scientific Research (MURST). In the last two years it has been used for internal projects and for thesis.
Financing of the facility (e.g. lump sum, through projects, dedicated grants, etc)	Internal funds of the II Faculty for the laboratory for students and thesists of Civil Engineering course and project (consulting) financed by external enterprise
Comparable facilities in EU	All the instrumentation for noise measurements and monitoring
Plans for further development of this or other research facilities	To buy other sonometers to carry out measurements and monitoring in different sites in a contemporary way

Survey form – POLITO4

Type of RI: (Tick appropriate box)	<input type="checkbox"/> Test tracks and crash facilities <input type="checkbox"/> Simulators, other simulation facilities, models <input checked="" type="checkbox"/> Field and other laboratories <input type="checkbox"/> Databases on transport, traffic and related impacts <input type="checkbox"/> Libraries and literature databases
Owner	Laboratory for Civil Engineering of the II Faculty of Engineering and DITIC of POLITECNICO DI TORINO
Name of the facility	NU metrics traffic counters
Contact (Name, address, phone, fax, e-mail)	Cristina Pronello C.so Duca degli Abruzzi, n. 24 – 10129 – TORINO – ITALY. Phone: +39 011 5645613. Fax: +39 011 5645699 E-mail: pronello@polito.it
Short description Maximum 100 words	This instrumentation it is used on road facilities to acquire traffic data: number of vehicles, classification of vehicles, speed, headway, gap. These counters run using the concept of the magnetic field and there is a radar system to control in real time the data during the acquisition. They can run in frame or sequential way. The first way means that the data are collected for time intervals to be chosen; the second way means that every single vehicle is counted, classified and monitored in term of speed, headway and gap. Each traffic counter monitors one lane and it has a special cover to protect it and to make it not visible to drivers. A system to fix the counters on the road is available (a special gun). We have six counters. The instrumentation is completed by a software for the data analysis.
Unique features	
Quantitative data on capacity or capability	
Availability for outside use (Yes/no; conditions)	Yes, if it is not used for some internal projects
Typical projects which used the facility in the last 2 years	Before the last two years in a project funded by Italian Ministry for the University and the Scientific Research (MURST). In the last two years it has been used for internal projects and for thesis.
Financing of the facility (e.g. lump sum, through projects, dedicated grants, etc)	Internal funds of the II Faculty for the laboratory for students and thesists of Civil Engineering course.
Comparable facilities in EU	All the instrumentation for traffic data acquisition
Plans for further development of this or other research facilities	To buy other types of traffic counters (e.g. video systems)

Survey form – POLITO8

Type of RI: (Tick appropriate box)	<input type="checkbox"/> Test tracks and crash facilities <input type="checkbox"/> Simulators, other simulation facilities, models <input checked="" type="checkbox"/> Field and other laboratories <input type="checkbox"/> Databases on transport, traffic and related impacts <input type="checkbox"/> Libraries and literature databases
Owner	Department of Hydraulic, Transport and civil Infrastructures (DITIC) – POLITECNICO DI TORINO
Name of the facility	Magneto-inductive system for testing of ropes of cableways
Short description Maximum 100 words	The system monitors the ropes of the cableways (magneto-inductive surveys). We use it to test the ropes of the cableways before the opening of the winter season. We carry out these surveys for the owner of the cableways (it is mandatory for the Italian law). In addition some experimental surveys are carried out on test ropes.
Unique features Maximum 100 words	In Italy there are few analogous systems
Quantitative data on capacity or capability	
Availability for outside use (Yes/no; conditions)	I do not think.
Typical projects which used the facility in the last 2 years	Surveys for external enterprises and internal research
Financing of the facility (e.g. lump sum, through projects, dedicated grants, etc)	Italian Ministry for the University and the Scientific Research (MURST) and internal funds of the I Faculty for the laboratory for students and thesists of Civil and Mechanical Engineering courses.
Comparable facilities in EU	
Plans for further development of this or other research facilities	

Survey form – TNO1

Type of RI: (Tick appropriate box)	<input type="checkbox"/> Test tracks and crash facilities <input checked="" type="checkbox"/> Simulators, other simulation facilities, models <input checked="" type="checkbox"/> Field and other laboratories <input checked="" type="checkbox"/> Databases on transport, traffic and related impacts <input type="checkbox"/> Libraries and literature databases
Owner	TNO
Name of the facility	TNO Centre for Fire Research
Contact (Name, address, phone, fax, e-mail)	Dr.ir. C. Both; head of TNO Centre for Fire Research Lange Kleiweg 5 2288 GH Rijswijk The Netherlands
Short description Maximum 100 words	The Centre for Fire Research is the only scientific research Centre dedicated to Fire Safety in the Netherlands.
Unique features Maximum 100 words	Large furnaces and other test facilities, unique expertise on modelling of fire behaviour, and response of materials and structures to fire; unique expertise for full scale reconstruction and ad-hoc on site testing.
Quantitative data on capacity or capability	Staff of about 30 people, most of them with an academic / university degree.
Availability for outside use (Yes/no; conditions)	Yes, also good connections to training centres for fire brigades in the neighbourhood.
Typical projects which used the facility in the last 2 years	EU projects on tunnel safety (DARTS, FIT, UPTUN) and on structural safety (sponsored by the ECSC: composite steel-concrete; hollow core slabs; ...); reconstruction Volendam fire incident; Benelux-tunnel fire tests; ...
Financing of the facility (e.g. lump sum, through projects, dedicated grants, etc)	Divers
Comparable facilities in EU	
Plans for further development of this or other research facilities	Further development of ad-hoc and on-site testing and training facilities

Survey form – TNO5

Type of RI: (Tick appropriate box)	<input type="checkbox"/> Test tracks and crash facilities <input type="checkbox"/> Simulators, other simulation facilities, models <input checked="" type="checkbox"/> Field and other laboratories <input type="checkbox"/> Databases on transport, traffic and related impacts <input type="checkbox"/> Libraries and literature databases
Owner	TNO Automotive Schoemakerstraat 97 2628 VK DELFT The Netherlands
Name of the facility	VEHIL (Vehicle Hardware in the Loop)
Contact (Name, address, phone, fax, e-mail)	TNO Automotive PO Box 6033 2600 JA DELFT The Netherlands Phone: +31 (0)15 269 64 16 Fax: +31 (0) 15 269 65 60 mailto: verburg@wt.tno.nl
Short description Maximum 100 words	VEHIL (vehicle hardware-in-the-loop) is a test facility for testing and developing intelligent vehicles. The VEHIL facility allows for laboratory testing of full-scale vehicles and their infrastructure. A virtual environment is defined in which vehicles, the infrastructure and their interactions are simulated. The full-scale intelligent Vehicle Under Test (VUT) with sensors and actuators is placed on a test bench and interfaced with this virtual environment, thereby replacing simulated vehicle behaviour with actual hardware behaviour. As the VUT on the test bench is stationary, the relative motion of its environment (e.g. other vehicles) is performed by automated guided vehicles (moving bases).
Unique features Maximum 100 words	With the VEHIL facility the functionality of intelligent Vehicles can be tested by “driving the complete vehicle in a relative world”. This is achieved by submitting the vehicle to realistic sensor inputs and realistic actuator loads. Elimination of the Vehicle speed makes complex experiments more manageable, more reproducible and safer. As a result the efficiency of the development process is greatly enhanced. This results in shorter development time, less prototypes and ultimately, lower costs. Furthermore, VEHIL contributes to a better transition from the simulation design activities to testing the full scale prototype on the road.
Quantitative data on capacity or capability	-
Availability for outside use (Yes/no; conditions)	Yes (payment required)
Typical projects which used the facility in the last 2 years	The facility is being developed. The technical feasibility has been confirmed on the basis of two

	functional demonstrators in 1999 en 2000.
Financing of the facility (e.g. lump sum, through projects, dedicated grants, etc)	Through dedicated grants and projects
Comparable facilities in EU	None
Plans for further development of this or other research facilities	TNO is planning to have a operational facility in 2003

Survey form – TNO6

Type of RI: (Tick appropriate box)	<input type="checkbox"/> Test tracks and crash facilities <input type="checkbox"/> Simulators, other simulation facilities, models <input checked="" type="checkbox"/> Field and other laboratories <input type="checkbox"/> Databases on transport, traffic and related impacts <input type="checkbox"/> Libraries and literature databases
Owner	TNO Automotive
Name of the facility	Crosswind Simulator
Contact (Name, address, phone, fax, e-mail)	Friedes Laméris TNO Automotive Phone: +31 15 269 6368 Fax: +31 15 269 7314 e-mail: lameris@wt.tno.nl
Short description Maximum 100 words	Transportable wind machines 6 units diameter 2m max. wind velocity 30 m/sec, (just in front) complete self supporting
Unique features Maximum 100 words	This is the only cross wind simulator in the world that can be transported to any place. The maximum wind speed of 30 m/sec and the possibility to put the units under every angle gives the possibility to use the simulator for a wide range of activities. It is also possible to use the units separately.
Quantitative data on capacity or capability	
Availability for outside use (Yes/no; conditions)	Yes, on suitable test track.
Typical projects which used the facility in the last 2 years	Crosswind sensitivity of passenger cars
Financing of the facility (e.g. lump sum, through projects, dedicated grants, etc)	Through projects
Comparable facilities in EU	no
Plans for further development of this or other research facilities	no

Survey form – TNO7

Type of RI:	<input type="checkbox"/> Test tracks and crash facilities <input type="checkbox"/> Simulators, other simulation facilities, models <input checked="" type="checkbox"/> Field and other laboratories <input type="checkbox"/> Databases on transport, traffic and related impacts <input type="checkbox"/> Libraries and literature databases
Owner	TNO Automotive
Name of the facility	Delft Tyre Test Trailer
Contact (name, address, phone, fax, e-mail)	J.J.M. van Oosten Schoemakerstraat 97; 2600 JA Delft; The Netherlands phone: +31 15 269 6420 fax: +31 15 269 7314 E-mail: Oosten@wt.tno.nl
Short description	The Tyre Test Trailer is a tyre measurement device, which allows the horizontal performance (Force and Moment) characteristics of passenger cars, light truck, race and motorcycle tyres to be measured under a large range of conditions at any location
Unique features	Tyre testing at any location (outside on public road or test circuit). Especially suitable for large camber angles (i.e. motor cycle tyres and roll over tests of passenger car tyres)
Quantitative data on capacity or capability	Test velocity: 20 – 110 km/h Tyre radius: 200 – 450 mm Vertical load : 500 - 10000 N Slip angle: -20 – 20 deg Camber angle: -30 .. +60 deg Water flow: 0 – 10 l/s More detailed specification: refer to contact adress or website: www.automotive.tno.nl
Availability for outside use	Yes, on any location
Typical projects which used the facility in the last 2 years	Standard Delft Tyre Data sets (i.e. Magic Formula Tyre model parameters) Tyre test procedure development Road related tyre research Roll-over tyre testing
Financing of the facility	By - TNO Automotive - contract research
Comparable facilities in EU	Tyre test trailer TU Stuttgart (Gernamy)
Plans for this or other research facilities	Further development of capabilities of Delft Tyre Test Trailer General modernisation of test devices

Survey form – TNO8

Type of RI:	<input type="checkbox"/> Test tracks and crash facilities <input type="checkbox"/> Simulators, other simulation facilities, models <input checked="" type="checkbox"/> Field and other laboratories <input type="checkbox"/> Databases on transport, traffic and related impacts <input type="checkbox"/> Libraries and literature databases
Owner	Delft University of Technology
Name of the facility	TUD Drum test stand
Contact (name, address, phone, fax, e-mail)	Erik Kuiper Schoemakerstraat 97 P.O. Box 6033 2600 JA Delft, the Netherlands phone: +31 (0)15 269 64 42 fax: +31 (0)15 269 73 14 e-mail: kuiper@wt.tno.nl
Short description	External drum test stand for quasi-static and dynamic tyre measurements. On the drum several measurement rigs can be installed: <ul style="list-style-type: none"> - longitudinal arm test rig (cleat experiments) - longitudinal arm test rig (dynamic braking experiments) - yaw oscillation test rig (center-point steering) - pendulum test rig (assessment of lateral transient tyre properties) - measurement tower test stand (vertical tyre stiffness under combined load)
Unique features	<ul style="list-style-type: none"> - Dynamic braking experiments. Using a special developed brake system, that controls the brake pressure, a brake torque is transferred to the wheel axle. Brake torque variations up to a frequency of 60 Hz can be applied. - Yaw oscillations experiments. The yaw oscillation test bench enables pure yaw oscillation movements of the tyre. With this test the out-of-plane belt dynamic properties are assessed. The bandwidth of excitation is 60 Hz. - Pendulum experiments. The tyre can be excited by a lateral displacement. The pendulum experiments are used to identify the transient properties of the tyre for lateral motions as a function of load.
Quantitative data on capacity or capability	<ul style="list-style-type: none"> - Diameter of drum: 2.5 m - Maximum speed: 300 km/h
Availability for outside use	The TUD Drum test stand is available for outside use.
Typical projects which used the facility in the last 2 years	<ul style="list-style-type: none"> - Development of SWIFT dynamic tyre model. - Projects for assessment of SWIFT datasets. - Research activities for Delft University of Technology.

Financing of the facility	The facility is fully financed by the Delft University of Technology.
Comparable facilities in EU	Drum test stands are widely used by car and tyre manufactures and universities. However, the dynamic test rigs are unique.
Plans for this or other research facilities	

Survey form – TNO9

Type of RI: (Tick appropriate box)	<input type="checkbox"/> Test tracks and crash facilities <input checked="" type="checkbox"/> Simulators, other simulation facilities, models <input checked="" type="checkbox"/> Field and other laboratories <input type="checkbox"/> Databases on transport, traffic and related impacts <input type="checkbox"/> Libraries and literature databases
Owner	TNO-MEP
Name of the facility	Field equipment: NOx, PM10, SO2, BTX monitors Analytical Laboratories: GC-MS; HPLC; IC; AAS Air pollution dispersion models: CAR: Streetcanyon model; TNO-Traffic: highway traffic model
Contact (Name, address, phone, fax, e-mail)	Dr. M.P. Keuken Department of Environmental Quality P.O. Box 342 7300 AH Apeldoorn +31 55 5493840 (T); +31 55 5493252 (F); keuken@mep.tno.nl
Short description Maximum 100 words	This department is the Dutch expert centre for research on the impact of traffic related air pollution on air quality. We have facilities to sample air pollution, to analyse samples and to model relevant air pollutants. Our expertise dates back from the 1980's and we have been involved in numerous contract research for Dutch authorities a.o. on air pollution surveys, to establish emission factors and to implement Environmental Impact Assessment for road infrastructure.
Unique features Maximum 100 words	Developed regulated models in compliance with the EU daughter directive on NOx and PM10 for both streetcanyons and highways.
Quantitative data on capacity or capability	Number of experts in the department: 40 employees with 15 PhD's and 2 Professors. Total budget 5 Meuro/year.
Availability for outside use (Yes/no; conditions)	Yes; under contract research conditions.
Typical projects which used the facility in the last 2 years	<ul style="list-style-type: none"> • EIA's for Dutch road infrastructure; • Emission factors for PM10, PM2.5, elemental carbon, ultrafines and NOx based upon tunnel measurements; • Traffic contribution to PM in the Netherlands as part of the National Aerosol Programme; • Air pollution surveys • Model development under EU guidelines; • EU projects: HEAVEN and REVEAL
Financing of the facility (e.g. lump sum, through projects, dedicated grants, etc)	15 % dedicated grants; 85% projects
Comparable facilities in EU	
Plans for further development of this or other research facilities	

Survey form – TNO16

Type of RI: (Tick appropriate box)	<input type="checkbox"/> Test tracks and crash facilities <input type="checkbox"/> Simulators, other simulation facilities, models <input checked="" type="checkbox"/> Field and other laboratories <input type="checkbox"/> Databases on transport, traffic and related impacts <input type="checkbox"/> Libraries and literature databases
Owner	TNO Automotive
Name of the facility	Vehicle Emissions Test Facilities
Contact (Name, address, phone, fax, e-mail)	TNO Automotive Powertrains Department PO Box 6033 2600 JA Delft The Netherlands G. Vogels, tel +31 15 269 72 67, fax +31 15 262 76 39, vogels@wt.tno.nl
Short description Maximum 100 words	The Vehicle Emissions Test Facilities are equipped to analyse vehicle emissions in European, USA FTP and Japanese 10-15 driving cycles etc. It consists of three test cells: two light-duty and one heavy duty dynamometer test cell..
Unique features Maximum 100 words	
Quantitative data on capacity or capability	
Availability for outside use (Yes/no; conditions)	Yes (payment required)
Typical projects which used the facility in the last 2 years	
Financing of the facility (e.g. lump sum, through projects, dedicated grants, etc)	
Comparable facilities in EU	
Plans for further development of this or other research facilities	

Survey form – TNO18

Type of RI: (Tick appropriate box)	<input type="checkbox"/> Test tracks and crash facilities <input type="checkbox"/> Simulators, other simulation facilities, models <input checked="" type="checkbox"/> Field and other laboratories <input type="checkbox"/> Databases on transport, traffic and related impacts <input type="checkbox"/> Libraries and literature databases
Owner	TNO Human Factors
Name of the facility	Instrumented car for computer assisted driving (ICACAD)
Contact (Name, address, phone, fax, e-mail)	Dr. ir. A.R.A. van der Horst TNO Human Factors P.O. Box 23 3769 ZG Soesterberg The Netherlands T +31 346 356 211 F +31 346 353 977 E vanderhorst@tm.tno.nl
Short description Maximum 100 words	The ICACAD can be used to assess the effects of certain infrastructural elements on driver behavior, as well as to evaluate new in-car systems. It has distance and position sensors, as well as lane position measuring equipment. It provides the option to present information on a visual display, acoustically, or proprioceptively (e.g., via the tactile sense). Registration of driving speed, lateral position, driver actions, etc. is standard. More advanced driver performance data can be derived, like TTCs, TLCs, headways, etc.
Unique features Maximum 100 words	
Quantitative data on capacity or capability	
Availability for outside use (Yes/no; conditions)	
Typical projects which used the facility in the last 2 years	
Financing of the facility (e.g. lump sum, through projects, dedicated grants, etc)	
Comparable facilities in EU	
Plans for further development of this or other research facilities	

Survey form – TRL7

Type of RI: (Tick appropriate box)	<input type="checkbox"/> Test tracks and crash facilities <input type="checkbox"/> Simulators, other simulation facilities, models <input checked="" type="checkbox"/> Field and other laboratories <input checked="" type="checkbox"/> Databases on transport, traffic and related impacts <input type="checkbox"/> Libraries and literature databases
Owner	TRL
Name of the facility	Environment Facility
Contact (Name, address, phone, fax, e-mail)	Steve Phillips Group Manager, Environment TRL Limited Crowthorne, Berkshire, RG45 6AU United Kingdom +44 (0) 1344 770765 +44 (0) 1344 770918 sphillips@trl.co.uk
Short description Maximum 100 words	Range of facilities to support research into the environmental impacts of transport. Specialisms in Noise, Vibration, Air Quality and Emissions. Vehicle and traffic noise systems, chemical analysis laboratory and mobile air quality and emissions monitoring
Unique features Maximum 100 words	Mobile air pollution monitoring laboratory TRITON, tyre road noise measurement vehicle Remote emissions sensing equipment ISO 10844 and other testing surfaces Truck tyre noise trailer
Quantitative data on capacity or capability	
Availability for outside use (Yes/no; conditions)	Yes – with trained staff
Typical projects which used the facility in the last 2 years	Long-term monitoring Tyre & road noise studies Road-side testing ISO 11819-1 SPB measurements
Financing of the facility (e.g. lump sum, through projects, dedicated grants, etc)	Charged to projects for usage
Comparable facilities in EU	-
Plans for further development of this or other research facilities	-

Survey form – VTI1

Type of RI: (Tick appropriate box)	<input type="checkbox"/> Test tracks and crash facilities <input type="checkbox"/> Simulators, other simulation facilities, models <input checked="" type="checkbox"/> Field and other laboratories <input type="checkbox"/> Databases on transport, traffic and related impacts <input type="checkbox"/> Libraries and literature databases
Owner	VTI
Name of the facility	Tyre test facilities
Contact (Name, address, phone, fax, e-mail)	
Short description Maximum 100 words	Facilities with moving surface and possible mount of truck and car tyres. The tested tyre is mounted on a static holder and the surface is moved.
Unique features Maximum 100 words	Controlled testing of tyres Conditions can be ice or dry surface with speed up to 40 m/h
Quantitative data on capacity or capability	
Availability for outside use (Yes/no; conditions)	Available to use in routine or research at normal charge
Typical projects which used the facility in the last 2 years	Controlled test of tyre characteristics
Financing of the facility (e.g. lump sum, through projects, dedicated grants, etc)	Through projects
Comparable facilities in EU	Unique
Plans for further development of this or other research facilities	

Survey form – VTI2

Type of RI: (Tick appropriate box)	<input type="checkbox"/> Test tracks and crash facilities <input type="checkbox"/> Simulators, other simulation facilities, models <input checked="" type="checkbox"/> Field and other laboratories <input type="checkbox"/> Databases on transport, traffic and related impacts <input type="checkbox"/> Libraries and literature databases
Owner	VTI
Name of the facility	VTI Laser RST
Contact (Name, address, phone, fax, e-mail)	Leif Sjögren, VTI, leif.sjogren@vti.se
Short description Maximum 100 words	Road condition monitoring equipment.
Unique features Maximum 100 words	Measuring without disturbing traffic. A lot of road characteristics collected in one run. DGPS-positioning of data. Raw data saved.
Quantitative data on capacity or capability	Measuring at normal traffic speed with simultaneous collection of a number of processed and raw data.
Availability for outside use (Yes/no; conditions)	Available to use in routine or research at normal charge
Typical projects which used the facility in the last 2 years	Road condition inventory, road-vehicle interaction effects
Financing of the facility (e.g. lump sum, through projects, dedicated grants, etc)	Through projects
Comparable facilities in EU	Unique
Plans for further development of this or other research facilities	

Survey form – VTI3

Type of RI: (Tick appropriate box)	<input type="checkbox"/> Test tracks and crash facilities <input type="checkbox"/> Simulators, other simulation facilities, models <input checked="" type="checkbox"/> Field and other laboratories <input type="checkbox"/> Databases on transport, traffic and related impacts <input type="checkbox"/> Libraries and literature databases
Owner	VTI
Name of the facility	VTI Laser RDT
Contact (Name, address, phone, fax, e-mail)	Leif Sjögren, VTI, leif.sjogren@vti.se
Short description Maximum 100 words	Road condition monitoring equipment.
Unique features Maximum 100 words	Measuring at high speed of road deflection profiles. Can be used to monitor road sections that causes vibration due to bad deflection.
Quantitative data on capacity or capability	Measuring at normal traffic speed with simultaneous collection of a number of processed and raw data.
Availability for outside use (Yes/no; conditions)	Available to use in routine or research at normal charge
Typical projects which used the facility in the last 2 years	Road condition inventory, vibration from road deflection studies
Financing of the facility (e.g. lump sum, through projects, dedicated grants, etc)	Through projects
Comparable facilities in EU	Unique
Plans for further development of this or other research facilities	

Survey form – VTI4

Type of RI: (Tick appropriate box)	<input type="checkbox"/> Test tracks and crash facilities <input type="checkbox"/> Simulators, other simulation facilities, models <input checked="" type="checkbox"/> Field and other laboratories <input type="checkbox"/> Databases on transport, traffic and related impacts <input type="checkbox"/> Libraries and literature databases
Owner	VTI
Name of the facility	BV14, Friction measuring equipment
Contact (Name, address, phone, fax, e-mail)	
Short description Maximum 100 words	Semitrailer mounted equipment for friction measurement. One axel of the towing car is used as part of the equipment
Unique features Maximum 100 words	Friction measured in both wheel tracks Designed for winter condition use Winter road condition measuring capabilities
Quantitative data on capacity or capability	Measuring speed up to 90 km/h
Availability for outside use (Yes/no; conditions)	Available to use mainly in research at normal charge
Typical projects which used the facility in the last 2 years	Winter condition follow up
Financing of the facility (e.g. lump sum, through projects, dedicated grants, etc)	Through projects
Comparable facilities in EU	Unique
Plans for further development of this or other research facilities	

Survey form – VTI5

Type of RI: (Tick appropriate box)	<input type="checkbox"/> Test tracks and crash facilities <input type="checkbox"/> Simulators, other simulation facilities, models <input checked="" type="checkbox"/> Field and other laboratories <input type="checkbox"/> Databases on transport, traffic and related impacts <input type="checkbox"/> Libraries and literature databases
Owner	VTI
Name of the facility	BV12, Friction measuring equipment
Contact (Name, address, phone, fax, e-mail)	
Short description Maximum 100 words	Truck mounted equipment for friction measurement.
Unique features Maximum 100 words	Water tank facilities. Full size car wheel. 0 to locked wheel slip. All angles. Research equipment with a lot of freedom
Quantitative data on capacity or capability	Measuring speed up to 70 km/h
Availability for outside use (Yes/no; conditions)	Available to use mainly in research at normal charge
Typical projects which used the facility in the last 2 years	EU waterplanning research VERT
Financing of the facility (e.g. lump sum, through projects, dedicated grants, etc)	Through projects
Comparable facilities in EU	Unique
Plans for further development of this or other research facilities	

B.4 Databases on transport, traffic and related impacts

Survey form – AVV1

Type of RI: (Tick appropriate box)	<input type="checkbox"/> Test tracks and crash facilities <input checked="" type="checkbox"/> Simulators, other simulation facilities, models <input checked="" type="checkbox"/> Field and other laboratories <input checked="" type="checkbox"/> Databases on transport, traffic and related impacts <input checked="" type="checkbox"/> Libraries and literature databases
Owner	Department for Public Works and Water Management, AVV Transport Research Centre, Test Centre for Traffic Systems
Name of the facility	Test Centre for Traffic Systems
Contact (Name, address, phone, fax, e-mail)	Rob van der Voort, Kluyverweg 4, 2629 HT DELFT, NL Phone + 31 15 251 7300 Fax + 31 15 251 7399, r.c.vdvoort@avv.rws.minvenw.nl
Short description Maximum 100 words	<p>The Test Centre for Traffic Systems which is located in Delft is a division of the Traffic and Transport Advisory Department (AVV) of the Department of Public Works and Water Management. The Test Centre collaborates with other knowledge institutes and innovation projects with a view to developing and introducing uniform Dynamic Traffic Management Systems. To this end the Traffic and Transport Advisory Department works in close collaboration with the Geometrical Department and other Specialist Departments of the Department of Public Works and Water Management. The Regional Directorates of the Department of Public Works and Water Management are also represented.</p> <p>The mission of the Dutch Ministry of Transport, Public Works and Water Management is 'Reliable water management and advanced route connections'. As a division of the ministry the Test Centre for Traffic Systems concentrates on the second part of this mission: steering traffic and transport in the right direction and creating the conditions for good and improved accessibility.</p> <p>The Test Centre supports the development and realization of traffic control systems and Dynamic Traffic Management Systems. The said support is provided primarily for the various divisions of the Dutch Ministry of Transport, Public Works and Water Management. The users of the services provided by the Test Centre can ask the Test Centre to test new or revised Traffic Systems, to carry out or collaborate on innovative projects, and for information about new developments and training courses for (new) traffic station operators (among others) and how traffic</p>

	systems are operated.
Unique features Maximum 100 words	<ol style="list-style-type: none"> 1. It offers testing facilities for Dynamic Traffic Management Systems, including the control of the testing and reference station. 2. It performs an educational function in offering training course facilities and demonstration facilities. 5. It stages demonstrations and provides information. <p>In support of these three functions the Test Centre manages office, conference, training course and demonstration facilities, including the necessary technical infrastructure.</p>
Quantitative data on capacity or capability	The Test Centre has accommodations for 10 projects the same time. Consultants and technical experts support the test facilities continually.
Availability for outside use (Yes/no; conditions)	There are some test facilities elsewhere in the country, in co-operation with the regional directorates. Please address any questions to Rob van der Voort.
Typical projects which used the facility in the last 2 years	Monitoring (MONICA); Architecture for Traffic Control (AVB); Roads to the Future, innovation programme; innovation projects in cooperation with the Dutch Police and the Public Ministry; Section Control
Financing of the facility (e.g. lump sum, through projects, dedicated grants, etc)	5 million Euro
Comparable facilities in EU	Test Centre for Traffic Systems in Sweden
Plans for further development of this or other research facilities	Road operators laboratory with simulation facilities (planning: 2004)

Survey form – CDV1

Type of RI: (Tick appropriate box)	<input type="checkbox"/> Test tracks and crash facilities <input type="checkbox"/> Simulators, other simulation facilities, models <input type="checkbox"/> Field and other laboratories <input checked="" type="checkbox"/> Databases on transport, traffic and related impacts <input type="checkbox"/> Libraries and literature databases
Owner	Transport Research Centre, Líšeňská 33a, 636 00 Brno, Czech Republic
Name of the facility	PC
Contact (Name, address, phone, fax, e-mail)	Daniela Hemzalová, phone: +420 5 48423713 E-mail: hemzalova@cdv.cz Ivana Šišmová, phone: +420 5 48423717 E-mail: sismova@cdv.cz Fax: +420 5 48423712 Transport Research Centre (in Czech CDV (Centrum dopravního výzkumu), Líšeňská 33a, 636 00 Brno, Czech Republic
Short description Maximum 100 words	Access to databases: IRTAD, OLISnet, PIARC, ECMT, TRIP
Unique features Maximum 100 words	Access to restricted documents of ECMT, PIARC and OECD
Quantitative data on capacity or capability	
Availability for outside use (Yes/no; conditions)	no
Typical projects which used the facility in the last 2 years	Searching of documents from these databases for expert purposes
Financing of the facility (e.g. lump sum, through projects, dedicated grants, etc)	Through project
Comparable facilities in EU	yes
Plans for further development of this or other research facilities	Access to other expert databases

Survey form – DLR5

Type of RI: (Tick appropriate box)	<input type="checkbox"/> Test tracks and crash facilities <input type="checkbox"/> Simulators, other simulation facilities, models <input type="checkbox"/> Field and other laboratories <input checked="" type="checkbox"/> Databases on transport, traffic and related impacts <input type="checkbox"/> Libraries and literature databases
Owner	Institute of Road and Transportation Studies Dept. of Transportation Planning and Traffic Engineering Seidenstraße 36 D-70174 Stuttgart, Germany
Name of the facility	Databases on airtraffic and road traffic
Contact (Name, address, phone, fax, e-mail)	Peter Schick Roberto Aoki ISVS Stuttgart Seidenstraße 36 D-70174 Stuttgart, Germany Phone: +49 711 121-2483 (Schick) -4232 (Aoki) Fax: +49 711 121-2484 E-Mail: schick@isvs.uni-stuttgart.de aoki@isvs.uni-stuttgart.de
Short description Maximum 100 words	<p>Airtraffic</p> <ul style="list-style-type: none"> - Exemplary processing of data sets received from Zurich airport - Illustration of the starting and landing trajectories - Determination of traffic density and traffic volume - Graphical presentation in a fundamental diagram - Influencing factors on the various levels of service - Estimation of unstable traffic conditions and capacity reserves by means of extrapolation <p>Roadtraffic</p> <ul style="list-style-type: none"> - Measurement data processing of german highways - Graphical presentation in a scatter-plots-diagram - determination of traffic breakdown probabilities in dependence of various influencing factors
Unique features Maximum 100 words	<p>Airtraffic</p> <p>Diagrams with approaching trajectories of regular and delayed flights for direct comparison</p> <p>4-D trajectories including the horizontal route and the descent profile as well as the time</p> <p>High traffic and low traffic profiles of the flight trajectories</p> <p>Datasets which can be used for further computer simulations</p>

	<p>Roadtraffic Data of various measurement sections at 10 different segments of german highways, time interval: 1 min, Amount: 20.160 Intervalls per section covering 14 days.</p> <p>Data processing for an intermodal transport capacity concept. Evaluation of effects with the aim to monitor the general traffic safety development and support R&D in this important social economic field.</p>
Quantitative data on capacity or capability	
Availability for outside use (Yes/no; conditions)	
Typical projects which used the facility in the last 2 years	
Financing of the facility (e.g. lump sum, through projects, dedicated grants, etc)	DLR budget
Comparable facilities in EU	Not known
Plans for further development of this or other research facilities	

Survey form – FHG

Type of RI: (Tick appropriate box)	<input type="checkbox"/> Test tracks and crash facilities <input checked="" type="checkbox"/> Simulators, other simulation facilities, models <input checked="" type="checkbox"/> Field and other laboratories <input checked="" type="checkbox"/> Databases on transport, traffic and related impacts <input type="checkbox"/> Libraries and literature databases
Owner	Fraunhofer Institute for Transportation and Infrastructure Systems FhG-IVI
Name of the facility	Department of Intermodal Traffic + Transportation Information & Management
Contact (Name, address, phone, fax, e-mail)	Mr. Jörg SCHÜTTE Zeunerstr. 38, 01069 Dresden, Germany phone: +49 (0) 351.4640-801, fax: +49 (0) 351.4640-803 e-mail: schuette@ivi.fhg.de internet: www.ivi.fraunhofer.de
Short description Maximum 100 words	One research and developing department of FhG-IVI focuses on intermodal traffic and transportation information & management systems. Since 10 years the department has gathered continuous growing experiences in developing and engineering of intermodal Telematic systems. The excellent scientific staff is the base for all activities, including analysis, concepts, development, prototyping, realisation, evaluation and operation. Main fields of activities are: <ul style="list-style-type: none"> * Traffic management * Traffic information systems * Intermodal passenger information * Traffic status acquisition * Informational, commercial and legal integration of traffic networks * Electronic ticketing and automatic fare management
Unique features Maximum 100 words	Experiences in developing and realisation of passenger information systems and intermodal traffic & transport management systems. Besides the human resources there are four laboratories: <ul style="list-style-type: none"> * Image Recognition/Processing and Traffic Sensors * Wireless Data Transmission and Communication Technology * Simulation & Timetable-Management * Mobile Information Techniques and Technology (PTA)
Quantitative data on capacity or capability	Scientific Staff: 20 Students / Assistants: 15
Availability for outside use (Yes/no; conditions)	Yes
Typical projects which used the facility in the last 2 years	INTERMOBIL – Intermodal Mobility/Traffic Information System Dresden City-Traffic Bonn – Traffic Simulation, Information

	and Management DIRECT – Continuous Intermodal Routing & Realtime Information DELFI – Continuous Electronic Timetable Information ICARE / CALYPSO – Contactless Electronic Ticketing
Financing of the facility (e.g. lump sum, through projects, dedicated grants, etc)	30 % Public 30 % Industry 30 % Base Financing
Comparable facilities in EU	
Plans for further development of this or other research facilities	Staff increasing New Building / Facilities in Planning

Survey form – HIT1

Type of RI: (Tick appropriate box)	<input type="checkbox"/> Test tracks and crash facilities <input type="checkbox"/> Simulators, other simulation facilities, models <input type="checkbox"/> Field and other laboratories <input checked="" type="checkbox"/> Databases on transport, traffic and related impacts <input type="checkbox"/> Libraries and literature databases
Owner	Centre for Research and Technology Hellas / Hellenic Institute of Transport
Name of the facility	Database Repository for Archived Transportation Data
Contact (Name, address, phone, fax, e-mail)	Maria P. BOILÉ, Ph.D. CERTH/HIT 6 th km. Chariadou-Thermi Road 57001 Thermi Greece Tel.:+30-310-498262 Fax:+30-310-498269 E-mail: mboile@certh.gr
Short description Maximum 100 words	ITS and non-ITS related data is collected and archived for historical, secondary and non-real time uses. The process involves data collection, data transfer, data processing, data management and storage and data access and transfer. Data sources include roadway surveillance, transit operations, incident management, other ITS and non-ITS, traditional sources (for accident data, O-D matrices, automotive technologies, standards, etc.). It provides data products to users. The goal is the unambiguous interchange and reuse of data and information through all functional areas.
Unique features Maximum 100 words	Data collection for specialized analyses by the potential users is often the most costly task of a project. The database system collects, analyses, evaluates and stores detailed data, which is then made available to the users. In addition to serving research purposes, this system involves a large number of potential users (planners, air quality analysts, transit operators, safety administrators and private sector groups) requiring detailed data for various activities such as: <ul style="list-style-type: none"> - Transportation Planning - Freight and Intermodal Planning - Traffic Management - Transit Management - Construction and Maintenance - Transportation System Monitoring - Air Quality Analysis - Land Use Regulation and Growth Management - Transportation Administration and Policy Analysis - The Private Sector - Safety Planning and Administration. - Commercial Vehicle Operations - Emergency Management

Quantitative data on capacity or capability	The system has the capability to provide information on: - Up to the minute traffic and transit conditions - Planned and emergency construction activities - Incidents - Transportation information related to special events - Personalized traffic and transit reports - Point to point transit itineraries
Availability for outside use (Yes/no; conditions)	Yes, upon agreement
Typical projects which used the facility in the last 2 years	New, not used yet. Typical use as described above.
Financing of the facility (e.g. lump sum, through projects, dedicated grants, etc)	Dedicated grant from Greek government for set-up. Projects and industrial contracts for further development and maintenance.
Comparable facilities in EU	N/A
Plans for further development of this or other research facilities	Yes, continuous update to include additional databases and ITS technology generated data

Survey form – INRETS 16

Type of RI: (Tick appropriate box)	<input type="checkbox"/> Test tracks and crash facilities <input type="checkbox"/> Simulators, other simulation facilities, models <input type="checkbox"/> Field and other laboratories <input checked="" type="checkbox"/> Databases on transport, traffic and related impacts <input type="checkbox"/> Libraries and literature databases
Owner	INRETS
Name of the facility	Databases
Contact (Name, address, phone, fax, e-mail)	
Short description Maximum 100 words	<p>INRETS has established several important databases on environment, mobility, and accidents:</p> <ul style="list-style-type: none"> - environment: in cooperation with European laboratories, a lot of emissions values has been stored for emission factors (i.e. Meet project). A database for the noise by all the land vehicles is in place (passenger-cars, trucks, buses, tramways, metros,...) - mobility: several large questionnaires about the mobility of persons have been made during the last twenty years (a new questionnaire will be emitted in 2002); so, it's possible to know the modifications about the daily moving of people (length of the distance, use of private car or public transport, cost of the transport per day,...) - accidents: a scientific approach of a number of road accidents has been made; the real elements « responsible » of the accident are analyzed (real speed, braking, leak of directional lights,...) as the elements responsible of the injuries (part of the vehicle which has caused injuries on the legs, or on the trunk,...). <p>These databases are very used by the stakeholders and also by car-makers.</p>
Unique features Maximum 100 words	
Quantitative data on capacity or capability	
Availability for outside use (Yes/no; conditions)	Yes
Typical projects which used the facility in the last 2 years	
Financing of the facility (e.g. lump sum, through projects, dedicated grants, etc)	Financing of these infrastructures is obtained through a mix between grants from the government, and from industrial and European projects
Comparable facilities in EU	
Plans for further development of this or other research facilities	

Survey form – TNO15

Type of RI: (Tick appropriate box)	<input type="checkbox"/> Test tracks and crash facilities <input type="checkbox"/> Simulators, other simulation facilities, models <input type="checkbox"/> Field and other laboratories <input type="checkbox"/> Databases on transport, traffic and related impacts <input type="checkbox"/> Libraries and literature databases
Owner	TNO Automotive
Name of the facility	DRIVES – database
Contact (Name, address, phone, fax, e-mail)	TNO Automotive PO Box 6033 2600 JA Delft The Netherlands Tel. +31 (0) 15 26 96 030 Fax +31 (0) 15 26 96 874 e-mail winkel@wt.tno.nl
Short description Maximum 100 words	<p>The name of this database is TNO Drivetrain InnoVations Expert System. TNO-Drives is a database with the goal to make relevant information about subjects in drivetrain and vehicle technology accessible, emphasising developments focussing on lowering emissions and energy-use.</p> <p>To accomplish this, this information is saved in an information-system with a specially designed structure. This structure contains:</p> <p style="padding-left: 40px;">Data about the different components of which drivetrains are constructed.</p> <p style="padding-left: 40px;">The connection these components have with each other in the drivetrain.</p> <p style="padding-left: 40px;">The vehicles these drivetrains are used in and the projects in which research is done on these drivetrains.</p>
Unique features Maximum 100 words	For the implementation of this database a relational computer-database was chosen. In a relational database a multitude of data can be stored which can be linked through mutual relations. By using this method the database is not only more efficient in use but also more flexible and accessible.
Quantitative data on capacity or capability	At the moment 4000 records are available in 33 formats.
Availability for outside use (Yes/no; conditions)	Yes (payment required)
Typical projects which used the facility in the last 2 years	Research projects in the field of Advanced Powertrains used this database as a way to access and export information
Financing of the facility (e.g. lump sum, through projects, dedicated grants, etc)	Development and maintenance of the database is/was financed by the Netherlands Ministry of Housing, Spatial Planning and the Environment. Use and dedicated updates of the database is/was financed through projects.
Comparable facilities in EU	-
Plans for further development of	The structure of the database will be used for storing

this or other research facilities	information on other research subjects at TNO. Also the value of this database structure for other companies is under investigation.
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Survey form – TRL7

Type of RI: (Tick appropriate box)	<input type="checkbox"/> Test tracks and crash facilities <input type="checkbox"/> Simulators, other simulation facilities, models <input checked="" type="checkbox"/> Field and other laboratories <input checked="" type="checkbox"/> Databases on transport, traffic and related impacts <input type="checkbox"/> Libraries and literature databases
Owner	TRL
Name of the facility	Environment Facility
Contact (Name, address, phone, fax, e-mail)	Steve Phillips Group Manager, Environment TRL Limited Crowthorne, Berkshire, RG45 6AU United Kingdom +44 (0) 1344 770765 +44 (0) 1344 770918 sphillips@trl.co.uk
Short description Maximum 100 words	Range of facilities to support research into the environmental impacts of transport. Specialisms in Noise, Vibration, Air Quality and Emissions. Vehicle and traffic noise systems, chemical analysis laboratory and mobile air quality and emissions monitoring
Unique features Maximum 100 words	Mobile air pollution monitoring laboratory TRITON, tyre road noise measurement vehicle Remote emissions sensing equipment ISO 10844 and other testing surfaces Truck tyre noise trailer
Quantitative data on capacity or capability	
Availability for outside use (Yes/no; conditions)	Yes – with trained staff
Typical projects which used the facility in the last 2 years	Long-term monitoring Tyre & road noise studies Road-side testing ISO 11819-1 SPB measurements
Financing of the facility (e.g. lump sum, through projects, dedicated grants, etc)	Charged to projects for usage
Comparable facilities in EU	-
Plans for further development of this or other research facilities	-

Survey form – VTI10

Type of RI: (Tick appropriate box)	<input type="checkbox"/> Test tracks and crash facilities <input type="checkbox"/> Simulators, other simulation facilities, models <input type="checkbox"/> Field and other laboratories <input checked="" type="checkbox"/> Databases on transport, traffic and related impacts <input type="checkbox"/> Libraries and literature databases
Owner	VTI
Name of the facility	Transguide
Contact (Name, address, phone, fax, e-mail)	Birgitta Sandstedt, Swedish National Road and Transport Research Institute (VTI), Library and Information Centre (BIC), SE-581 95 Linköping, Sweden Phone: +46 13 20 42 14; Fax: +46 13 14 14 36; E-mail: birgitta.sandstedt@vti.se
Short description Maximum 100 words	Transguide is a vertical portal, a vortal, in the area of transport and communication. The information is searchable in ten different databases: Websites (information on websites), Electronic documents (references to full text documents), Full text search (searching directly in electronic documents), Literature databases (information on databases which contain references), TRAX (library catalogue at BIC, VTI), Data banks (information on data banks i.e. statistics, "who-does-what", project information, codes, patents, etc), Conferences (a calendar of forthcoming conferences), Libraries (information on libraries), Periodicals (information on journals available at BIC, VTI) and Dennis (information on the "Dennis package", infrastructure scheme in the Greater Stockholm Region). From April, Transguide will be available in English. http://www.transguide.org
Unique features Maximum 100 words	The coverage. All information is validated, described and made searchable on subject area, category and/or keywords
Quantitative data on capacity or capability	30 concurrent users
Availability for outside use (Yes/no; conditions)	Yes at http://www.transguide.org
Typical projects which used the facility in the last 2 years	-
Financing of the facility (e.g. lump sum, through projects, dedicated grants, etc)	Financed by VINNOVA, the Swedish Agency for Innovation Systems, through a project.
Comparable facilities in EU	-
Plans for further development of	Multi-media, e-learning

this or other research facilities	
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B.5 Libraries and literature databases

Survey form – AVV1

Type of RI: (Tick appropriate box)	<input type="checkbox"/> Test tracks and crash facilities <input checked="" type="checkbox"/> Simulators, other simulation facilities, models <input checked="" type="checkbox"/> Field and other laboratories <input checked="" type="checkbox"/> Databases on transport, traffic and related impacts <input checked="" type="checkbox"/> Libraries and literature databases
Owner	Department for Public Works and Water Management, AVV Transport Research Centre, Test Centre for Traffic Systems
Name of the facility	Test Centre for Traffic Systems
Contact (Name, address, phone, fax, e-mail)	Rob van der Voort, Kluyverweg 4, 2629 HT DELFT, NL Phone + 31 15 251 7300 Fax + 31 15 251 7399, r.c.vdvoort@avv.rws.minvenw.nl
Short description Maximum 100 words	<p>The Test Centre for Traffic Systems which is located in Delft is a division of the Traffic and Transport Advisory Department (AVV) of the Department of Public Works and Water Management. The Test Centre collaborates with other knowledge institutes and innovation projects with a view to developing and introducing uniform Dynamic Traffic Management Systems. To this end the Traffic and Transport Advisory Department works in close collaboration with the Geometrical Department and other Specialist Departments of the Department of Public Works and Water Management. The Regional Directorates of the Department of Public Works and Water Management are also represented.</p> <p>The mission of the Dutch Ministry of Transport, Public Works and Water Management is 'Reliable water management and advanced route connections'. As a division of the ministry the Test Centre for Traffic Systems concentrates on the second part of this mission: steering traffic and transport in the right direction and creating the conditions for good and improved accessibility.</p> <p>The Test Centre supports the development and realization of traffic control systems and Dynamic Traffic Management Systems. The said support is provided primarily for the various divisions of the Dutch Ministry of Transport, Public Works and Water Management. The users of the services provided by the Test Centre can ask the Test Centre to test new or revised Traffic Systems, to carry out or collaborate on innovative projects, and for information about new developments and training courses for (new) traffic station operators (among others) and how traffic systems are operated.</p>

<p>Unique features Maximum 100 words</p>	<ol style="list-style-type: none"> 1. It offers testing facilities for Dynamic Traffic Management Systems, including the control of the testing and reference station. 2. It performs an educational function in offering training course facilities and demonstration facilities. 6. It stages demonstrations and provides information. <p>In support of these three functions the Test Centre manages office, conference, training course and demonstration facilities, including the necessary technical infrastructure.</p>
<p>Quantitative data on capacity or capability</p>	<p>The Test Centre has accommodations for 10 projects the same time. Consultants and technical experts support the test facilities continually.</p>
<p>Availability for outside use (Yes/no; conditions)</p>	<p>There are some test facilities elsewhere in the country, in co-operation with the regional directorates. Please address any questions to Rob van der Voort.</p>
<p>Typical projects which used the facility in the last 2 years</p>	<p>Monitoring (MONICA); Architecture for Traffic Control (AVB); Roads to the Future, innovation programme; innovation projects in cooperation with the Dutch Police and the Public Ministry; Section Control</p>
<p>Financing of the facility (e.g. lump sum, through projects, dedicated grants, etc)</p>	<p>5 million Euro</p>
<p>Comparable facilities in EU</p>	<p>Test Centre for Traffic Systems in Sweden</p>
<p>Plans for further development of this or other research facilities</p>	<p>Road operators laboratory with simulation facilities (planning: 2004)</p>

Survey form – CDV4

Type of RI: (Tick appropriate box)	<input type="checkbox"/> Test tracks and crash facilities <input type="checkbox"/> Simulators, other simulation facilities, models <input type="checkbox"/> Field and other laboratories <input type="checkbox"/> Databases on transport, traffic and related impacts <input checked="" type="checkbox"/> Libraries and literature databases
Owner	Transport Research Centre, Líšeňská 33a, 636 00 Brno, Czech Republic
Name of the facility	Library database CLAVIUS in operating system WINDOWS
Contact (Name, address, phone, fax, e-mail)	Daniela Hemzalová, phone: +420 5 48423713 E-mail: hemzalova@cdv.cz Ivana Šišmová, phone: +420 5 48423717 E-mail: sismova@cdv.cz Fax: +420 5 48423712 Transport Research Centre (in Czech CDV (Centrum dopravního výzkumu), Líšeňská 33a, 636 00 Brno, Czech Republic
Short description Maximum 100 words	Library database contains: research reports, laws, standards, Czech and foreign documents and books, expert publications, journal articles, electronic documents
Unique features Maximum 100 words	Database contains all research reports of Transport Research Centre since 1968 to this day
Quantitative data on capacity or capability	6000 records in database, these documents are physically available in the library.
Availability for outside use (Yes/no; conditions)	no
Typical projects which used the facility in the last 2 years	For solved projects are made expert researches of coherent documents
Financing of the facility (e.g. lump sum, through projects, dedicated grants, etc)	Through project
Comparable facilities in EU	yes
Plans for further development of this or other research facilities	To make available the database CLAVIUS to expert community and to interconnect library databases with databases of other special libraries, e.g. Road Directorate of the Czech Republic

Survey form - DTF

Type of RI: (Tick appropriate box)	<input type="checkbox"/> Test tracks and crash facilities <input type="checkbox"/> Simulators, other simulation facilities, models <input type="checkbox"/> Field and other laboratories <input type="checkbox"/> Databases on transport, traffic and related impacts <input checked="" type="checkbox"/> Libraries and literature databases
Owner	DTF Knuth – Winterfeldts Allé Bygning 116 Vest DK-2800 Kgs LYNGBY DANEMARK tel : +45 45 25 65 01 fax : +45 45 93 65 33 e-mail kp@dtf.dk
Name of the facility	Danish Transport Research Institute
Contact (Name, address, phone, fax, e-mail)	Knuth – Winterfeldts Allé Bygning 116 Vest DK-2800 Kgs LYNGBY DANEMARK tel : +45 45 25 65 01 fax : +45 45 93 65 33 e-mail kp@dtf.dk
Short description Maximum 100 words	Library at DTF on transport issues, in particular on safety environment and economy issues
Unique features Maximum 100 words	
Quantitative data on capacity or capability	
Availability for outside use (Yes/no; conditions)	
Typical projects which used the facility in the last 2 years	
Financing of the facility (e.g. lump sum, through projects, dedicated grants, etc)	
Comparable facilities in EU	
Plans for further development of this or other research facilities	

Survey form – KT13

Type of RI: (Tick appropriate box)	<input type="checkbox"/> Test tracks and crash facilities <input type="checkbox"/> Simulators, other simulation facilities, models <input type="checkbox"/> Field and other laboratories <input type="checkbox"/> Databases on transport, traffic and related impacts <input checked="" type="checkbox"/> Libraries and literature databases
Owner	Institute for Transport Sciences Ltd. (KTI Rt.)
Name of the facility	Documentation and Information Centre (The Library)
Contact (Name, address, phone, fax, e-mail)	Dr. Mihály FÜREDI, librarian 1119 BUDAPEST, Thán K. u. 3-5. Ph: (36-1)371-5928 Fax: (36-1) 205-5951
Short description Maximum 100 words	Special library, open every working day for public use from 9:00-16:00, users are transportation professionals, researchers
Unique features Maximum 100 words	The biggest Hungarian library in the field of transportation. Collection on transport policy, road building and testing, transport economics, traffic engineering, transport safety, etc.
Quantitative data on capacity or capability	70 000 library units, 65 foreign language journals, 12 seats in reading room, computer background facilities for the whole institute
Availability for outside use (Yes/no; conditions)	Public library, registration is obligatory for loans. Accessible via Internet without password: http://www.kti.hu/dik/fma.htm
Typical projects which used the facility in the last 2 years	All main projects run at the Institute for Transport Sciences Ltd.
Financing of the facility (e.g. lump sum, through projects, dedicated grants, etc)	Financed mainly by the Institute for Transport Sciences Ltd. There is an annual support from the Hung. Min. of Transport and Water Management, covering partial costs
Comparable facilities in EU	Libraries and information services in research institutes (for public use, too) such as TNO, LCPC, BASt etc.
Plans for further development of this or other research facilities	The library is of the same age as the Institute (operating since 1938), it will be maintained in the future, too.

Survey form – TNO1

Type of RI: (Tick appropriate box)	<input type="checkbox"/> Test tracks and crash facilities <input checked="" type="checkbox"/> Simulators, other simulation facilities, models <input checked="" type="checkbox"/> Field and other laboratories <input checked="" type="checkbox"/> Databases on transport, traffic and related impacts <input checked="" type="checkbox"/> Libraries and literature databases
Owner	TNO
Name of the facility	TNO Centre for Fire Research
Contact (Name, address, phone, fax, e-mail)	Dr.ir. C. Both; head of TNO Centre for Fire Research Lange Kleiweg 5 2288 GH Rijswijk The Netherlands
Short description Maximum 100 words	The Centre for Fire Research is the only scientific research Centre dedicated to Fire Safety in the Netherlands.
Unique features Maximum 100 words	Large furnaces and other test facilities, unique expertise on modelling of fire behaviour, and response of materials and structures to fire; unique expertise for full scale reconstruction and ad-hoc on site testing.
Quantitative data on capacity or capability	Staff of about 30 people, most of them with an academic / university degree.
Availability for outside use (Yes/no; conditions)	Yes, also good connections to training centres for fire brigades in the neighbourhood.
Typical projects which used the facility in the last 2 years	EU projects on tunnel safety (DARTS, FIT, UPTUN) and on structural safety (sponsored by the ECSC: composite steel-concrete; hollow core slabs; ...); reconstruction Volendam fire incident; Benelux-tunnel fire tests; ...
Financing of the facility (e.g. lump sum, through projects, dedicated grants, etc)	Divers
Comparable facilities in EU	
Plans for further development of this or other research facilities	Further development of ad-hoc and on-site testing and training facilities

Survey form – UPM1

Type of RI: (Tick appropriate box)	<input type="checkbox"/> Test tracks and crash facilities <input type="checkbox"/> Simulators, other simulation facilities, models <input type="checkbox"/> Field and other laboratories <input type="checkbox"/> Databases on transport, traffic and related impacts <input checked="" type="checkbox"/> Libraries and literature databases
Owner	University of Madrid – Transport Research Group
Name of the facility	Transport Journals Library
Contact (Name, address, phone, fax, e-mail)	University of Madrid Transport Department Prof. A. Monzon Ciudad Universitaria s/n 28040 MADRID SPAIN tel +34 91 336 53 73 fax +34 91 549 26 28 e-mail amonzon@dumbo.ca.minos.upm.es
Short description Maximum 100 words	- Main transport journal and particularly all published in Spanish - <u>Books and studies</u>
Unique features Maximum 100 words	Documents in Spanish about Transport from 20 years ago, books and journals
Quantitative data on capacity or capability	
Availability for outside use (Yes/no; conditions)	Networks of researchers
Typical projects which used the facility in the last 2 years	All kinds of research, thesis etc.
Financing of the facility (e.g. lump sum, through projects, dedicated grants, etc)	Department budget and projects
Comparable facilities in EU	
Plans for further development of this or other research facilities	Every year new titles are imported and all official publications

Survey form – VTI9

Type of RI: (Tick appropriate box)	<input type="checkbox"/> Test tracks and crash facilities <input type="checkbox"/> Simulators, other simulation facilities, models <input type="checkbox"/> Field and other laboratories <input type="checkbox"/> Databases on transport, traffic and related impacts <input checked="" type="checkbox"/> Libraries and literature databases
Owner	VTI
Name of the facility	Library and Information Centre (BIC)
Contact (Name, address, phone, fax, e-mail)	Birgitta Sandstedt, Swedish National Road and Transport Research Institute (VTI), Library and Information Centre (BIC), SE-581 95 Linköping, Sweden Phone: +46 13 20 42 14; Fax: +46 13 14 14 36; E-mail: birgitta.sandstedt@vti.se
Short description Maximum 100 words	BIC collects, organises, stores and disseminates information in the field of transport and communication research. BIC has the national responsibility in Sweden for providing information and for making the literature available. This special library is one of the largest in the area. It comprises 4,600 m of literature and about 1,000 periodicals. BIC has a broad contact network both nationally and internationally and is the Swedish centre in the international co-operations within OECD (the database ITRD). BIC also offers information searches and current awareness service on commission.
Unique features Maximum 100 words	Special holdings are statistics, standard specifications and report series from Transport Research Laboratory (TRL) and Transportation Research Board (TRB). More than 110,000 references are searchable in the database TRAX and a list of journals is available in the database Tidskrifter. Both these databases are accessible via Internet in the cluster Transguide http://www.transguide.org
Quantitative data on capacity or capability	
Availability for outside use (Yes/no; conditions)	Yes. 24/7 availability via Transguide and e-mail. Visitors are welcome during office hours (if possible, please let us know in advance)
Typical projects which used the facility in the last 2 years	
Financing of the facility (e.g. lump sum, through projects, dedicated grants, etc)	Financed by VTI (internal services), VINNOVA, the Swedish Agency for Innovation Systems (basic external services) and by other customers through projects on commission.
Comparable facilities in EU	
Plans for further development of this or other research facilities	-