Ministerie van Infrastructuur en Milieu

ITS-Plan the Netherlands
2013-2017

Contents

Introduction

This report has been drawn up in the context of the European ITS Directive (2010/40/EU). The directive requires member states to report at certain times. Further guidelines have been stipulated under article 17 of the directive with regard to the form of this reporting (see http://ec.europa.eu/transport/its/road/action_plan/doc/c_2011_4947_en.pdf).

In August 2011, the Netherlands reported on the state of progress made on implementing technological applications for traffic and transport (*ITS in the Netherlands*).

In August 2012 the Netherlands must report to Brussels on national ambitions, plans and projects for ITS over the coming five years: the ITS Plan. This plan has been drawn up by a team from the Ministry of Infrastructure and the Environment, Rijkswaterstaat (Waterways and Public Works Agency) and Connekt. They have used contributions from other stakeholders such as road managers and market participants derived from workshops, factsheets and meetings held on 8 and 21 May, amongst other things.

Chapter 1 sets out a number of developments that shape the Dutch ITS strategy, such as the trends, the approach and the frameworks. This fulfils parts a and b of the reporting guidelines for member states under 2010/40/EU.

Chapter 2 fulfils parts C, D and E of the reporting guidelines and describes a number of specific projects, activities and initiatives that are representative of the Netherlands within first four priority areas under the European ITS Action Plan:

1 Optimal use of road, traffic and travel data;
2 Continuity of traffic and freight management ITS services;
3 ITS road safety and security application;
4 Linking the vehicle with the transport infrastructure.

Chapter 3 outlines the intended developments in the field of the 6 priority actions from the ITS Directive, which will mandate specifications for:

A the provision of EU-wide multimodal travel information services;
B the provision of EU-wide real-time travel information services;
C data and procedures for the provision, where possible, of minimal, road safety related minimum universal traffic information free of charge to users;
D the harmonised provision for an EU-wide interoperable eCall;
E the provision of information services for safe and secure parking places for trucks and commercial vehicles;
F the provision of reservation services for safe and secure parking places for trucks and commercial vehicles.

Chapter 4 contains a number of recommendations, questions and offers to the EU/EC that are deemed to be important in order to jointly achieve a rapid and harmonised implementation of ITS.


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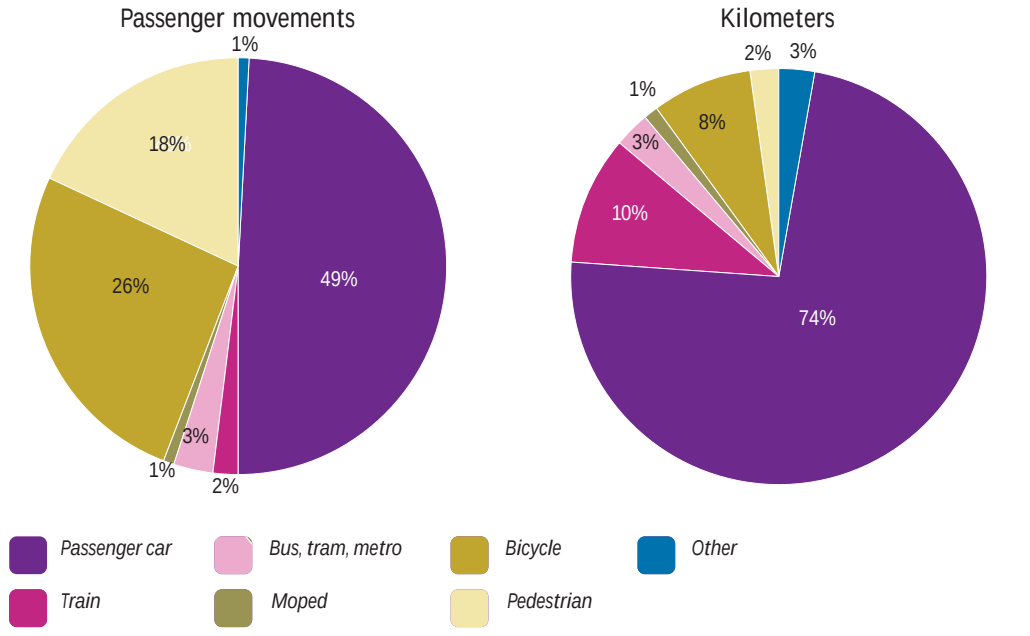
1 Strategy

1.1 General

With 16.6 million inhabitants, a surface area of just over 33,000 square kilometres and approximately 9 million[1] vehicles, the Netherlands is densely populated and very mobile. The primary road network, with a total length of around 5,800 kilometres[2], is highly utilised and this leads to an average of 200 kilometres of traffic jams per working day. Many measures have been taken over the last three decades to facilitate this high level of mobility, and many more are needed as traffic is expected to grow between 10 and 35% between now and 2020[3]. In addition to commuters, freight carriers are one of the major users of the road network.This is one of the largest sectors in the Netherlands, providing 750,000 jobs and 8.5% of GDP.



1.2 Strategic developments

This chapter describes a number of developments that have a major impact on the Dutch strategy for ITS, such as trends, ideals, ambitions, direction and frameworks.
Because of its intensely used road network, the Netherlands has been actively deploying Intelligent Transportation Systems since the 1970's. In the Netherlands, ITS is utilised to make the best possible use of the existing road network and link it to the other transportation networks as much as possible. Experience and evidence clearly show that ITS is contributing towards more efficient, safer and cleaner transportation in a cost effective way and also providing increasingly seamless services for road users.

The Dutch government is currently working on a strategy for the further development of ITS. However, as explained above ITS is thereby not a goal in itself.

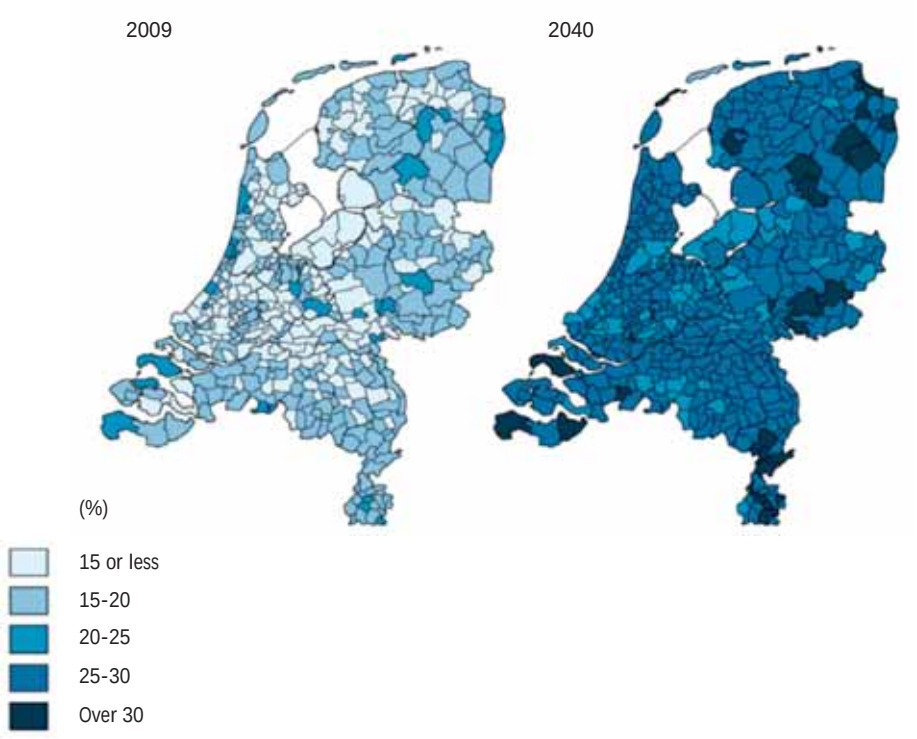
In accordance with the European ITS Action Plan and the ITS Directive, this plan focuses on intended development and use of technological

tools in road traffic (particularly traffic information and management) but is not restricted to this aspect. High population density and intensity of infrastructure use means that an integrated approach is being adopted.

The available quality of the infrastructure and the various forms of transport is a determining factor for the performance of the economy and the appeal of potential settlement locations for individuals and companies. That is why the Netherlands is investing in the construction, innovation, management and maintenance of infrastructure, but also in services and collaboration relating to both passenger and freight transport.

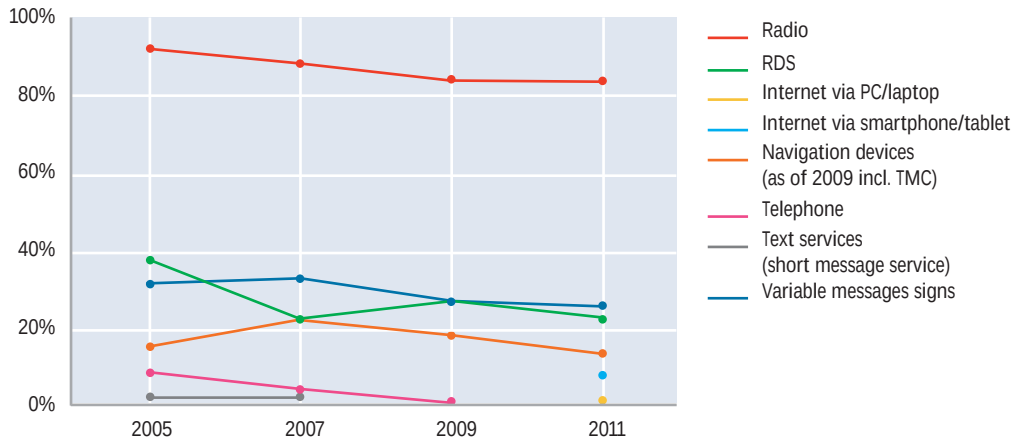
1.3 Trends

The Dutch population is ageing. The *baby boom generation* will be retiring in the coming years. It is anticipated that this group will enjoy many more years of good health and will continue to play an active role in society; more so than previous generations of retirees. However, the ratio of working people to retirees will continue to decline. By 2040 the population will have increased by 10% to around 17.8 million, and only then will it start to shrink. What is key is that pressure on mobility will only increase, particularly in and around the Randstad conurbation. Another difference from previous generations is the use of modern communication methods such as the internet and, increasingly, smartphones. The use of navigation devices has been growing rapidly for many years.



Numbers aged 65+ per region in 2009 and 2040

At the other end of society, it is clear that young people are handling mobility differently from preceding generations. The cost of owning and using a vehicle has risen over the past few years, and parking spaces in town and city centres are at a premium. More and more young people are therefore no longer automatically opting for a car. Instead they are choosing mobility solutions that best match their specific situation. They are assisted in this by the possibilities offered by technological developments. The development of smartphones makes it increasingly easy to access information to make choices whilst on the move. Nonetheless, the graph below shows that the use of the various channels to obtain traffic information has not changed particularly rapidly in recent years.



Notes on graph: use of information channels during trip from study into satisfaction with traffic information among users of primary roads conducted in 2011 on behalf of Rijkswaterstaat (Waterways and Public Works Agency).

An important trend in road traffic is the increasing amount of ever more fragmented shipments as a result of internet ordering by both individuals and companies. The potential of this sector is particularly large (for individuals it currently involves a sum of € 7 billion per year) and the sector will have an even greater impact on road transport to the front door for both individuals and companies.

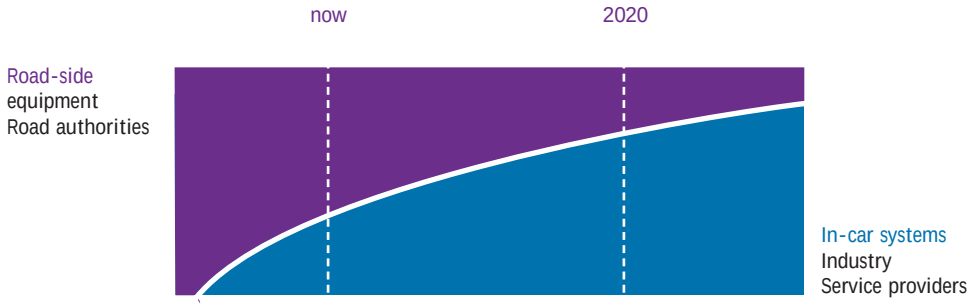
Some shippers have already significant progress in developing systems which enable consumers and professional buyers to:

1 have a direct influence over delivery times and locations, possibly for an additional fee;
2 have insight into the progress of the order, including the delivery time.

This independent development is good for the economy. However, the question is whether this will develop sufficiently independently or

whether there are opportunities for the government to accelerate the process and increase efficiency. Market participants are becoming ever better at providing road users with information, especially under normal conditions. Government - and public road managers in particular - will, however, continue to play an important role in the event of major unplanned disruptions (such as disasters).

This also applies to decisions relating to the use of infrastructure (such as closing tunnels). The government will primarily focus on its core task of maintaining public order and safety, including in relation to road traffic. The diagram below provides a general outline of expected developments over time, broken down into the functionalities and systems used (roadside and in-vehicle).



Expected system development from road side to in-car

1.4 Ambitions

The Policy on Infrastructure and the Environment (Structuurvisie Infrastructuur en Ruimte) from 2011 seeks to strengthen the link between mobility, the environment and the economy within area development. To this end indicators are being developed for calculating the accessibility of an area at average speed (km/hour) and the reliability of travel times, amongst other things. These *accessibility indicators* calculate accessibility for each mode and build on the ambitions and objectives from the Mobility Policy Memorandum (2006) (Nota Mobiliteit) and the Mobility Approach (2008) (MobiliteitsAanpak). In practical terms this means, for example, a target value of 80 km/hour on average for traffic during the rush hour on urban ring roads and 50 km/hour on regional roads. The target value for travel times in the rush hour is no more than one and a half times the travel time outside rush hour between large cities, and a maximum of twice as long on other roads. The target value for reliability on the primary roads is that 95% of movements during the rush hour are in time. The *Better Utilisation* (*Beter Benutten*) programme aims to reduce congestion by approximately 20% on specific corridors in the most congested areas of the country and facilitate the increased use of public transport. The importance of ITS projects within the programme is obvious: an amount of approximately € 170 million is budgeted for some 75 projects in total, divided across the clusters Travel Information (consisting of In-Car Information, Multi-Modal Information, Parking Information), Blue Wave (shipping-related information such as lock and bridge schedules, dock information, etc.), Green Wave (optimising traffic light settings) and Dynamic Traffic

Management. The logistics sector has major economic importance and makes a substantial contribution to the Dutch economy. The Ministry of Economy, Agriculture and Innovation has therefore put together a team of leading public and private parties. This top logistics team has formulated the following ambition: "*In 2020 the Netherlands will occupy a leading international position (1) in the handling of goods streams, (2) in managing the chain for (inter)national logistical activities and (3) as a country which offers an innovation and investment climate to attract transport and logistics businesses.*"

Sustainability plays an important role in these ambitions: goods streams must be organised in a socially responsible, environmentally friendly and future-proof way. Under the Lean and Green programme carriers and shippers are striving to achieve a 205 reduction in carbon emissions within five years. Some 250 companies are expected to have committed themselves to this goal by 2012. The programme will also be followed up in other countries within Europe. However, sustainability in the logistics sector involves more than simply a reduction in carbon emissions through fuel savings and improved loading. It also involves a reduction in negative effects such as congestion and noise pollution, the efficient use of public spaces and the reuse of resources. This fits with an entrepreneurial climate which is paying increased attention to the sustainability of products and processes.

The traffic and automotive industries are also of major economic importance and contribute to the Dutch economy. A top team has therefore been put together from these sectors. The HTSM (High Tech Systems and Materials) top team has formulated the ambition of expanding the automotive sector from its current turnover of 17 billion euro to 24 billion euro, and from 45,000 jobs at the moment to 55,000 jobs in 2020. The Dutch automotive sector has worked out the developments needed to achieve this into two spearheads in its roadmap. One of these is Smart Mobility and is being developed and realised through DITCM (see chapter 2 for more details). The Smart Mobility Programme aims to provide new solutions for congestion reduction by using ICT, sensor and communication systems with a focus on cooperative driving and predictive traffic management.

The programme also offers new intelligent solutions for accident avoidance. It will pay special attention to the safety of vulnerable road users in order to reduce traffic injuries.

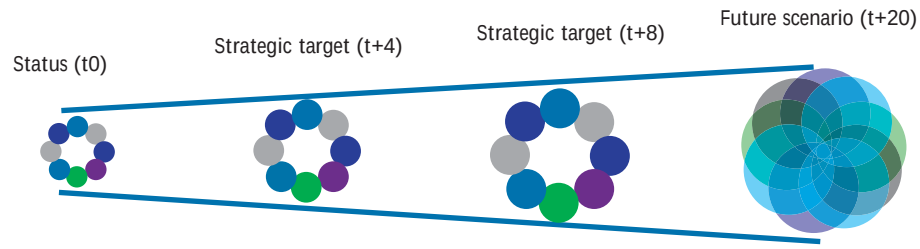
In summary, the aim is to achieve accessibility of the urban networks and economic key areas by 2028. This involves the mobility system being cohesive and robust and offering a range of choices as a result of its high quality. This implies a system with strong modalities, each of which has sufficient capacity, so that they can continue to function effectively during incidents and maintenance work. It will also involve strong links between the modalities so that the transfer of passengers and goods is facilitated. This will provide travellers and shippers with more opportunities to choose the best (combinations of) means of transport. The Multimodal Travel Information Approach (Aanpak Multimodale Reisinformatie – 2009) therefore formulates the ambition of offering travellers an optimum and deliberate choice in terms of means of transport, travel times and routes at any time (pre-trip and in-trip) and at all locations within the Netherlands by 2015 at the latest. This is vital for improved accessibility, the utilisation of infrastructure and the satisfaction of travellers. This will be achieved by improving the availability and quality of data, particularly in terms of being up-to-date, reliable and covering all areas.

1.5 Path

Work is currently being done to determine a path for traffic information and traffic management. This has a major impact on the direction of ITS in general and road traffic in particular. The following path-shaping developments can thereby be identified, which could be accelerated:

- from collective information to individual information (for personal mobility);
- from information via roadside systems to systems in vehicles (such as smartphones and navigation systems) and a combination of the two;
- from local to network-wide traffic management;
- from traffic management as a public domain tasks to a public/private partnership.

A development strategy has been drawn up for traffic management and traveller information at network level. A concept has been developed on the basis of demographic, economic, technological and international trends and the path-defining developments have been derived from this. One important feature in this strategy is the technological development of ITS and cooperative systems. Short term policy objectives are thereby linked to the future (SOLL) situation and the current situation (IST). These developments impact on traffic management elements: the road user, the vehicles, the information/data, the measures taken, the infrastructure, the traffic control centres, control principles and, last but not least, the organisation.



Current position of	Goals of the Netherlands:	Consistent vision on the future of Traffic Management. Based on trends and developments on:
• Technology (infra, VC, vehicle) • Organisation • Data and information • Control principles • Traffic requirements	• Policy on infrastructure and the environment (SVIR) • Making better use of infrastructure • Policy and developments of RWS • Cooperation with local authorities Goals from Europe: • EU Directives and policies • ITS actionplan • Easyway (Deployment Guidelines) • CEDR	• Social demografic • Economical • Technological

Composition of the Traffic Management development strategy

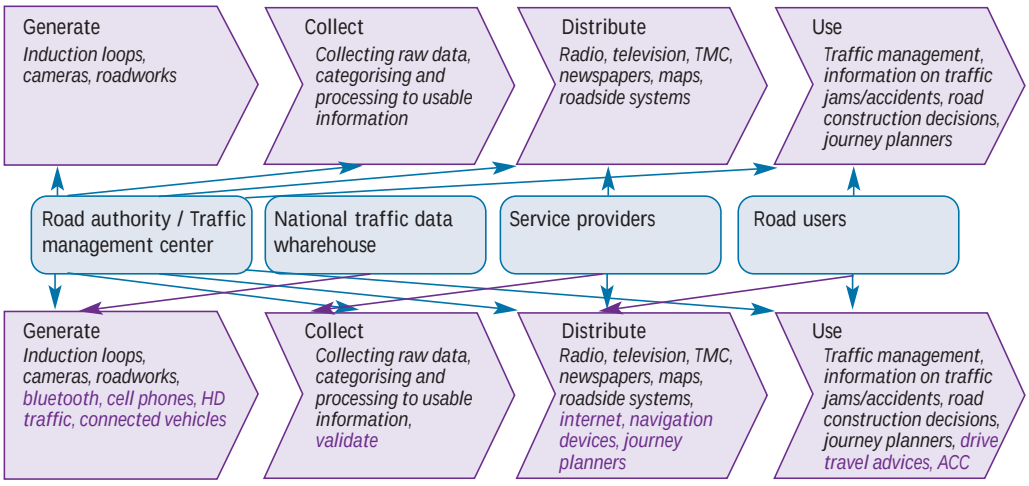
The nature and implementation of traffic management and traffic information will change as a result of this, and commercial operators will offer services alongside public traffic managers, which may result in a shift in the division of roles between the state and the private sector.

The government intends to transfers an increasing share of the execution of a number of operational tasks to the private sector, whereby the state will act in a supervisory role. This might include detecting incidents and acquiring streaming data (speed, travel times and density). The increasing use of a variety of data sources offers opportunities for improved cost-effectiveness, but will also lead to complex challenges including legal and organisational issues. The ownership and the terms for (re)using the data - either processed or unprocessed - cannot always be clearly determined by public bodies, and is partly dependent on the price charged by commercial operators (who charge more if data is disseminated to third parties). This impacts on the position and design of existing public databases and may lead, for example, to questions about the provision of functions such as acting as a portal and broker (including quality assurance) for private information.

Data availability, quality and open data

Improved data availability and quality are important cornerstones for the development of ITS applications. Collecting, storing and distributing this data is organised, standardised and financed in a unimodal fashion in the Netherlands, through one information desk for road traffic (NDW, national traffic data warehouse) and - in the near future - also for public transport (ND-OV). This data is processed into travel information, both unimodal and multimodal, by market players such as 9292 (public transport service provider) and the ANWB (Dutch automobile club). Collective data collection for road traffic arose as a result of a need for traffic management and was initially focussed on improving road safety. The focus now lies on improved accessibility and traffic flow. The focus for public transport lies on improved information provision for the traveller, principally during the journey itself, with the market parties taking the lead in this. Cycling data is primarily maintained by volunteers and is already at a usable level.

Former traffic information chain



New traffic information chain

In order to stimulate innovative services within the sphere of ITS, it is vital that data is as widely available as possible. For this reason, the Dutch government is opting to pursue an active open data policy, using the *open unless* principle. As a result, market players can develop new services with a minimum of investment. What is important in this respect is that European, national and local authorities have already made a decision in principle to actively make public government information/data available for reuse. This means that data which is generated or gathered during the execution of public tasks will, in principle, be freely available, with open standards suitable for electronic processing where possible. The charge will not exceed the marginal cost of supplying the data, and no usages conditions will be attached. In this regard the current proposals for a new Government Information (Public Access) Act (Wet openbaarheid van bestuur - Wob) mean that the Netherlands will allow less scope for exceptions than the European Commission's proposed amendments to the Public Sector Information Directive (PSI, 2003/98/EC).

Exceptions to the principle of charging the marginal cost of supplying the data remain possible in the Netherlands, but have to be stipulated in law as exceptions to the revised Wob. This applies, for example, to the Land Registry (Kadaster) and the RDW National Vehicle and Driving Licence Registration Authority, which are largely financed through user fees (under the '*user pays*' principle) and for which no alternative financing is available (in the short term). If addition services (in terms of quality and availability) are required on top of the basic level for open data (this is subject to an obligation to make the best effort and no delivery guarantee), a payment to cover costs can or must be charged for this (if not required for the public task, according to the Competition Act (Mededingingswet)). This mainly applies to large scale commercial applications. Charges can be waived for smaller users, such as start-ups, until a pre-determined usage limit is reached.

Research is currently still taking place into the implications of choosing *open data* in principle for the executive agencies' current practice of only offering their data via web services under a standard licensing agreement with mutual obligations and in return for payment of a symbolic contribution towards the costs of provision or connection. An example of this is the NDW, which asks users for a limited annual contribution. In theory real-time traffic data will also be provided available as open data in due course, and definitely by 2015.

Road safety

The Netherlands occupies a leading global position when it comes to road safety. The ambition is to keep the number of fatalities and injuries as low as possible. In addition to measures relating to infrastructure and vehicles, the way in which safety is organised has also played a significant role in this. Key features of this are a national policy and decentralised implementation.

Road safety policy in the Netherlands is shifting from safety measures aimed mainly at vehicles and reducing the severity of consequences to preventative safety measures that focus more on preventing accidents. Vulnerable groups such as cyclists and elderly people occupy a significant place in this. In-car applications such as automated braking systems and pedestrian detection can play an important role in this. Luckily vehicle manufacturers are increasingly including this type of functionality (as options) in new models.

This is being stimulated by also including it in the rating given by EuroNCAP, of which the Ministry of Infrastructure and the Environment is a member. The market for ITS applications relating to road safety has a strong independent drive from the market which is supported from the public side with pilots, awards and research into the impact on behaviour. Hence the Minister for Infrastructure and the Environment recently awarded the National Road safety Prize to an application of the *pay-as-you-drive* concept for young drivers. The App4drivers uses an iPhone to record how safely the participants are driving, leading to a reducing in claims of almost 100% and a saving on premiums. The alcohol lock was also introduced for repeat offenders at the end of 2011. Between December 2011 and June 2012 436 locks were installed and some two thousand were imposed by the courts[5]. Research has recently been carried out into a speeding lock and monitor.

1.6 Frameworks

Finance

The Netherlands has invested many billions (in hardware, software, people and expertise) in order to enable the current range of ITS applications (a summary of the installed base can be found in the 2011 report). Many millions are also spent each year on operations, management, maintenance and upkeep. For example, Rijkswaterstaat spends around € 200 million a year on (dynamic) traffic management on the primary road network.

Over the coming years the Better Utilisation Programme (Programma Beter Benutten) will be investing around €170 million in ITS applications at regional level. Around € 50 million is also available for innovative and effective ITS applications at a national level. At the same, the Netherlands also has to cut the costs of construction, management and maintenance. This is resulting in cut-backs on roadside systems, particularly systems that provide information to road users on the primary road network. The use of innovative information services via individual systems such as navigation systems, smartphones etc. can nonetheless result in continuing improvements in the quality of the information. The fact that this is a realistic expectation is clear from the growing sales for private sector participants from the automotive sector in the Netherlands, which already account for € 17 billion a year.

Organisational: within the Netherlands

Dutch parties play an active role in many international collaborations within the broad field of ITS. One example of this is Rijkswaterstaat's involvement in EasyWay, which is aimed at on a more harmonised implementation of ITS applications for road traffic.

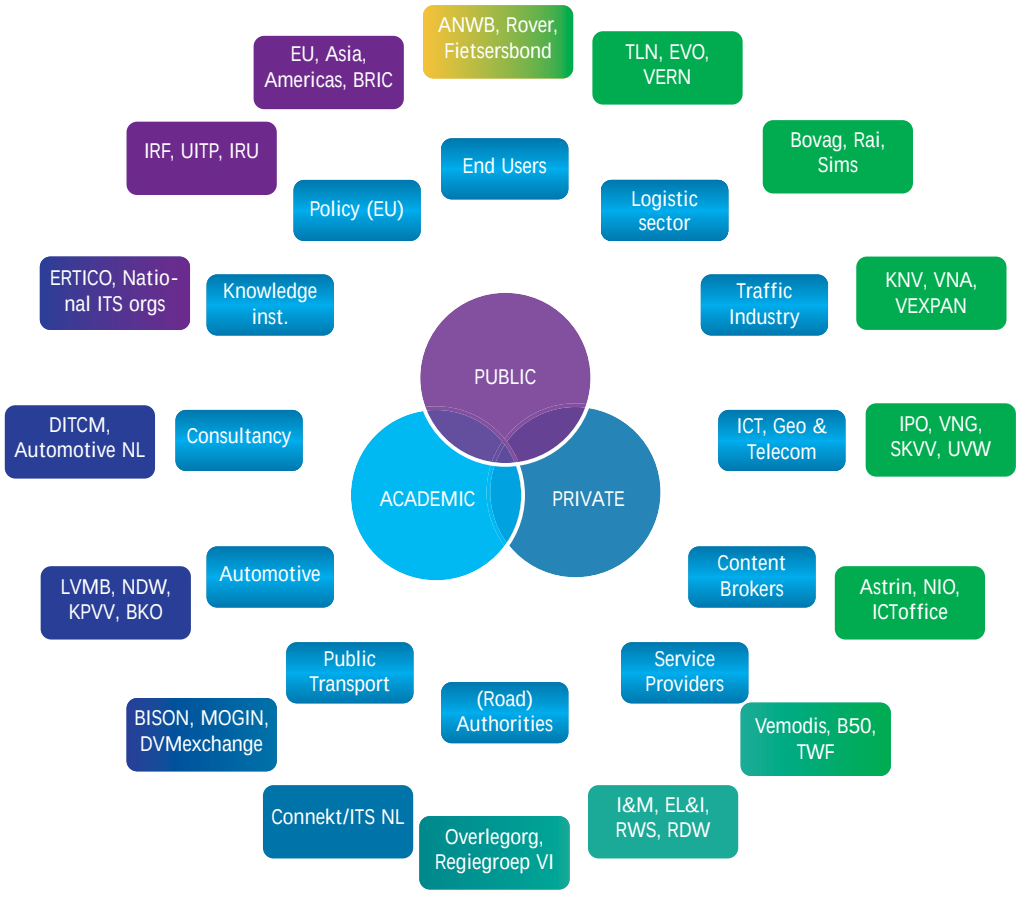
Active collaboration between public and private parties has also been underway in the Netherlands for many years. Hence the Strategic Council for Traffic Information and Management (Strategisch Beraad Verkeersinformatie en Verkeersmanagement) drew up a collective vision of the future for the development of traffic information and traffic management together with four *no regret* actions between 2009 and 2011.

An important element in this is that the combined use collective roadside systems and individual vehicle systems will be required over the coming 10 years, and that the latter will generally support road users rather than being compulsory.

The parties meet on a regular basis on various bodies and at a range of levels, including Connekt ITS Netherlands, Automotive NL, the Traffic Information Directional Group (Regiegroep Verkeersinformatie), Infrastructure and Environmental Forum (Overlegorgaan Infrastructuur), the Smart Working Platform (Platform Slim Werken), Intelligent Travel (Slim Reizen - SWSR) and many others. There are also bodies that bring together private companies, such as Vemodis, Astrin and ICT Office. Public partners work together in bodies including:

- The National Traffic Management Council (Landelijke Verkeersmanagement Beraad - LVMB, where national (Rijkswaterstaat) and local road managers make agreements about various ITS instruments and services relating to regional traffic management such as traffic control centres, regional operational processes, disruption planning, collective procurement etc.

- At regional level there are many collaborations between road managers where joint traffic management plans are developed and implemented and agreements made about operations and exploitation. Examples of these collaborations are: Zuidvleugel (around Rotterdam and The Hague), Noord-Holland, the Utrecht region and Zuid-Oost Brabant (Eindhoven and environs).



ITS-NL Stake holders

A triple helix (governments, private sector and knowledge institutes) is currently drafting a national roadmap for smart mobility which will set out developments within the sphere of ITS over time. From 2013 this roadmap will be used in the collaboration between the central government, local authorities and market players.

Organisation: international

Following the ITS Action Plan and the ITS Directive, the focus in the Netherlands is on international cooperation with public and commercial stakeholders. This is essential for the cost-effective deployment of ITS. For example, EasyWay and the EasyWay Deployment Guidelines are useful tools for the national road authorities. The POLIS and Urban ITS initiatives focus more on local and regional interests.
The Netherlands believes in strong international cooperation and coordinated research. It is therefore an active participant in European organisations such as CEDR and FEHRL.

Legal

The ITS Directive 2010/40 was incorporated into the Road Traffic Act (Wegen Verkeerswet 1994) on 1 June 2012. This will make it possible to fulfil European obligations quickly in the future through ministerial orders on the basis of specifications for the priority actions. The Ministry of the Interior and Kingdom Relations is coordinating work on a new Government Information (Public Access) Act (Wet openbaarheid van bestuur - Wob), partly in connection with the European Directive on Public Sector Information (PSI), Inspire and the Digital Agenda. The consequences of actively publishing all public data without usage conditions and for a marginal cost must be further investigated. This plan cannot go beyond what has been set out about this under *Path*. The amendment of the Administrative Provisions (Road Traffic) Decree (Besluit administratieve bepalingen inzake het wegverkeer - BABW) for electronic traffic orders - which is due to take effect on 1/1/2013 - is currently taking place.

Measuring impact

A comprehensive evaluation study was conducted in 2010 into the effects of measures to improve the use of the roads infrastructure, such as minor infrastructural measures (including reversible lanes and extended slip roads), traffic information, (coordinated network-wide) traffic management and (simple cooperative) systems such as slip road filtering systems, traffic signalling, dynamic traffic panels.

The main conclusions were:

- Better utilisation of the roads infrastructure makes an effective contribution to the accessibility objectives. Hence a selection of measures to improve the use of the roads infrastructure reduced the growth in travel times over 2000-2009 by 6% and the lack of reliability by 9% over the same period (KIM, 2010).
- The effectiveness of many utilisation measures depends on the specific conditions under which they are employed (location, time, operating regime, traffic density, etc.). For example, travel information panels at strategic decision-making locations have a positive impact on traffic flow and the more efficient use of the overall road network, whilst this effect cannot be achieved at locations where there is no option of an alternative route.
- Quantitative judgements in general about the cost-effectiveness of utilisation measures are impossible because the effectiveness in individual cases varies greatly and because there is still insufficient insight into the actual life-cycle costs of utilisation. The study has allowed a qualitative assessment of the cost-effectiveness of each tool, linked to the conditions. Hence installing signage (congestion warning) is cost-effective on the city ring roads, where accidents have a huge impact on traffic flow in the network, but not on all corridors outside the Randstad conurbation.

On the basis of this evaluation study a Policy Consideration System (Beleids Afwegings Systematiek - BAS) has been developed to support decision-making about (re)investment in various utilisation measures. This system will also be used to measure the impact of measures from the Better Utilisation Programme. These will be available in 2014.

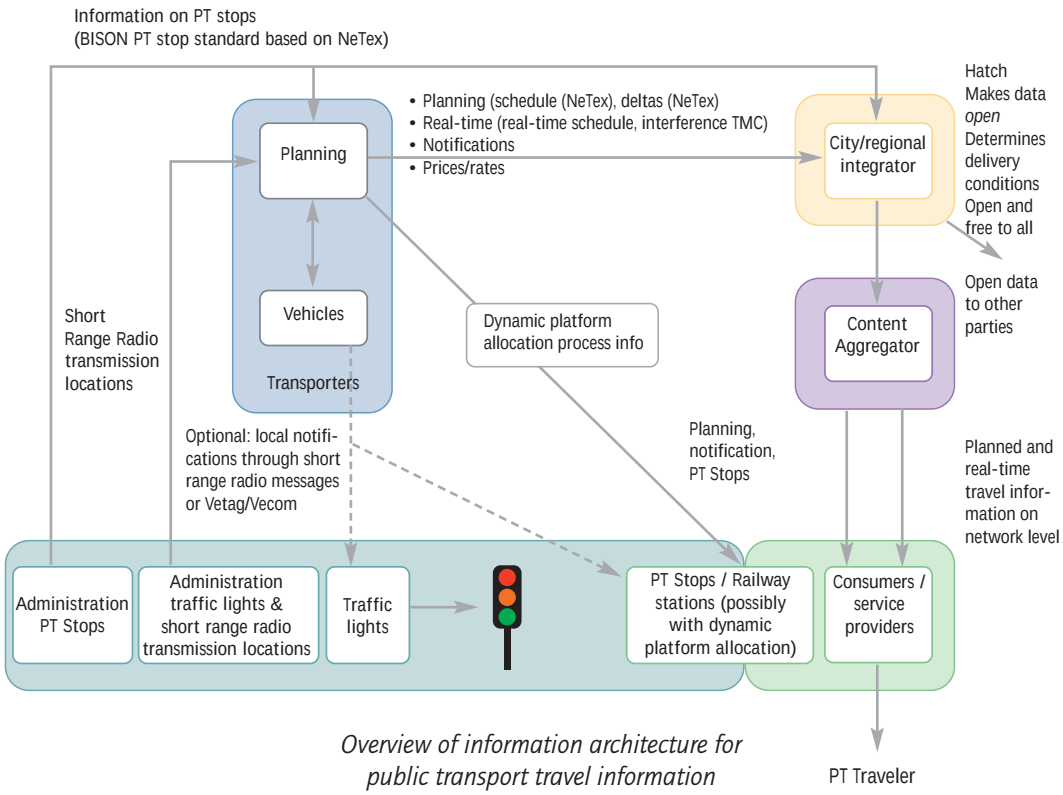
Architecture and standards

An architecture for ITS is the means for ensuring that organisations, plans, initiatives and developments within ITS fit together and that the desired provision of information can develop across countries, regions and sectors. The appropriate use of ITS architecture will lead to the coordinated and standardised development of a cohesive framework of technical and information structures and systems that will deliver the required information about traffic and travel to mobility providers and users at the right place and the right time.

An overall national architecture is not being used in the Netherlands. However, partial architectures are being developed in various areas. One example of this is BISON, where standards and interfaces for public travel information are being developed and managed. The architecture includes portals where open data is made available to stakeholders. Within the CHARM project, the European framework architecture FRAME is being used for international collaboration with the Highways Agency (UK) on the design of traffic control centres.

In terms of standards, there are links to and active collaboration with European developments where possible. Examples of this include Datex (II), TransModal, CEN 278, ETSI TC ITS and EETS. MOGIN was set up in 2011 as a cooperative partnership for road managers and market players to develop operational standards for road traffic. This relates to issues such as dynamic location reference.

The diagrams below provide an insight into the data flows in the areas of public transport and road traffic respectively.



Overview of information architecture for public transport travel information

Traffic Information: collect, store and distribute

2

Projects, activities and initiatives

2.1 Introduction

This chapter provides a summary of projects, activities and initiatives that are currently underway within the ITS sphere in the Netherlands or will start within the coming five years. It is not just central government that is active with regard to ITS; many local authorities have been very active for many years in the development and roll-out of ITS services in areas such as traffic management and incident management. Private sector players are also working independently or in partnership with public bodies on the development of ITS in the Netherlands. The examples provided are considered to be the most influential on developments over the coming years at national and international level.

The general developments that are currently being seen and the developments that can be expected over the next five years are listed for each priority area from the ITS Action Plan. This is done with the aid of examples of projects, activities and initiatives. A number of projects which are interesting in terms of European developments and which will set the tone for national developments are also highlighted within the four areas. In order to make the link to the actions within these areas, the action numbers used by the Directorate-General for Mobility and Transport in the *Intelligent Transport Systems in action* (2011) have been adopted where applicable.

The descriptions take account of the guidelines for reporting by member states, sections C, D and E, as adopted on 13 July 2011 by European Commissioner Kallas under article 17 of the ITS Directive.

2.2 Action area 1: Optimal use of road, traffic and travel data

Activities aimed at implementation

The need to communicate real-time information on the state of the transportation network became apparent in the late 1980s. Alongside regular congestion information broadcast on FM radio, the monitoring equipment for traffic management allowed the national road operator Rijkswaterstaat (Waterways and Public Works Agency) to offer more precise traffic information to the end-user. In the 1990s commercial operators started providing traffic information to end-users. What followed was the commercial provision of traffic information via on-board navigation devices. These developments have created the need for public and private parties to cooperate in the field of traffic information.

The Dutch Ministry of Infrastructure & Environment is working with regional authorities on a range of projects within the Better Utilisation programme, aimed at reducing congestion by around 20% on specific corridors in the most congested areas of the country and facilitating the increasing use of public transport.
The importance of ITS projects within the programme is obvious: a sum of around € 170 million is budgeted some 75 projects in total, divided between the clusters Travel Information (consisting of In-Car Information, Multi-Modal Information, Parking Information), Blue Wave (shipping related information, e.g. lock and bridge schedules, dock information, etc.), Green Wave (optimisation of traffic lights settings) and Dynamic Traffic Management.

Projects in the Travel Information cluster (Priority Area 1) are aimed at stimulating improvements in the quality of the current and new provision of traffic and travel information services, in order to provide travellers with more accurate, reliable, context-specific and tailor-made pre-trip and in-trip traffic and travel information on their smartphones, navigation devices and PCs. This includes information on diversions or delays resulting from (urgent or otherwise unplanned) road-works, events or accidents on the planned route; information about the quickest route to an available parking place nearest to the planned destination; information about the current locally permitted maximum speed or recommended (green wave) speed; information about the expected TOA at an available Park&Ride place and the departure time of the next shuttle bus to the town centre; and warnings about hazardous weather or road conditions ahead on the planned route.
Such improved information enables travellers to make a well-informed choice regarding their mobility, instead of relying on habitual behaviour. Matching behaviour to current and predicted conditions creates a better balance between mobility demands and capacity, resulting in reduced congestion.

The national report from 2011 has already noted that almost all motorways are now monitored with ITS. 980 km (approximately one third of the total 3200 km) of the motorways are equipped with lane control, and there are over 15,000 speed limit matrix signs. Dynamic Traffic Management displays real-time travel information on one of the 200 Dynamic Route Information Panels (Variable Message Sign) to advise the road user. This has resulted in a reduction in lost vehicle hours of between 5 and 10%. ITS is also applied to reduce environmental impact. For example, lower speed limits are enforced near residential areas by measuring average speeds per car/per section using Automatic Number Plate Recognition. Several billion euro have also been invested in Traffic Management Systems since 1995, resulting in a reduction in lost vehicle hours and fewer accidents and casualties. Maintenance costs are estimated to be approximately 60 million euro a year, so the maintenance and upgrading of existing ITS will remain a major activity. Over the coming years additional investments will rise to € 200 million per year by 2020. For reasons of economy, safety and better service to the road user international standards such as DATEX and recommendations for the use of VMS are applied when applicable. EasyWay is an important forum for harmonisation and cooperation with neighbouring networks. The development of Deployment Guidelines within EasyWay can be deemed a pre-requisite for achieving European harmonisation.

Current projects, initiatives and activities

Work on the provision of travel information has been taking place in the Netherlands for many years. The aim is to enable a person to plan their trip from door to door. There collection of data thereby remains unimodal, but the dissemination of information takes place in a multimodal fashion.

A number of databases have been created to exchange data. The decision was made in 2007 to set up the National Traffic Database (Nationale Databank Wegverkeersgegevens - NDW). The NDW database offers insight into the current traffic situation on the participating authorities' motorways, highways and urban through routes. The database also provides status data, such as information about roadworks. NDW distributes this data to road managers and providers of traffic information. They in turn inform road users about the traffic

situation. NDW regularly discusses data and information quality and standards with its clients and suppliers (actions 1.1, 1.2). A current project which is having a significant impact on the travel information for road users is *Minder Hinder* (*Less Inconvenience*). This will provide far more up-to-date and reliable data about the consequences of roadworks and events.

There is also extensive development of databases taking place in other areas.

Reisinformatiegroep (Travel Information Group) has been providing travel information about public transport by telephone since 1992 and, at a later stage, also over the internet and other media. A number of local authorities have also taken the initiative to disseminate travel information about urban and suburban areas via GOVI (Grenzeloze Openbaar Vervoer Informatie - Borderless Public Transport Information). More information about public transport information via the ND-OV can be found in the box. (actions 1.1, 1.2, 1.5).

ND-OV

Brief description

The Public Transport National Data project (Nationale Data Openbaar Vervoer – ND-OV) was launched in January 2011 in order to improve the data needed for travel information about public transport. Both the quality (updates, use of standards, reliability) and the quantity (more detail is on the way) of the data will be improved. The data will also become available with a continuity guarantee and a low entry threshold for multiple users who will in turn provide travellers with the desired information about public transport. More specifically, this involves travel advice, travel guidance and information at stops. The travel information will be based on current data as much as possible. Public transport travel information includes the timetables and up-to-date information from all concession-holding operators in the Netherlands, apart from volunteer-driven neighbourhood bus services, call-up bus services and ferry services in the Wadden Islands. The formal obligation for operators to provide up-to-date data for travel information was implemented with effect from 2011 in section 10 of the Passenger Transport Decree 2000 (Besluit personenvervoer 2000). The obligations have been or will also be included in various contracts for public transport concessions.

Tools

At the heart of the project lies the licensing agreement. The NDOV is drawing up a licensing agreement which is designed to make data available to users. This licensing agreement will define the data and provide a continuity guarantee for users. The licensing agreement is the same for every user in order to create a level playing field.

In addition, NDOV is developing the following activities:

- Ensuring the development and use of standards
- Identifying what data (and associated quality) is involved
- Identifying gaps (what data cannot yet be provided) and eradicating them
- Ensuring that good quality (up-to-date) stop data is available
- Making agreements which ensure that operators provide data
- Ensuring that users can access the data within a level playing field
- Developing a management model for travel information for public transport

Resources:

The Ministry of Infrastructure and the Environment can provide an investment budget of € 7.5 million (over a number of years) and manpower (approx. 4 people). Other public transport authorities are also providing manpower.

Stakeholders

NDOV is a collaboration between the Ministry, the provinces and the urban regions. Operators and commercial players are also closely involved and participate in elements of the project.

Milestones

- Publication of the licensing agreement in the summer of 2012
- Decision-making about the allocation of roles and tasks between the public authorities and private sector before 2013
- Data will be available for users from 1 January 2013 at the latest
- Quality improvements in relation to the data realised before 1 January 2015

Monitoring

Decisions about the monitoring method will be linked to decisions about the allocation of roles and tasks between the public authorities and private sector

Contact persons

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Applications that provide traffic and travel information have become increasingly evident in the Netherlands over the past few years. However, road and public transport information alone is not enough to genuinely encourage multimodal route planners and navigation. A national database for parking is also under development; for more information see chapter 3, at A (actions 1.2, 1.5).

The role that social media could play in the development of such applications is also being investigated. An example of this is the EU-subsidised SUNSET project, which uses data generated by smartphones in towns including Enschede and which is intended to be used to develop new business cases for sustainable urban mobility.

The databases listed enable commercial operators to gain access to relevant public data for up-to-date information. However, static information is also very important in order to be able to deliver good information services. Rijkswaterstaat is therefore providing the National Roads File (Nationaal Wegen-bestand - NWB) and ensuring that it is updated regularly, partly on the basis of input from local road managers. In order to keep static information up-to-date, the ministry is carrying out the project described below concerning the electronic exchange of traffic orders (actions 1.3).

ELECTRONIC PUBLICATION OF STATIC TRAFFIC DECISIONS

Summary and objectives

This project creates an obligation for road managers to use an application to publish static traffic orders. It leads to accurate, consistent and low cost updates from public road managers about road signs and measures for digital maps, travel planners and navigation. This will improve the cost effectiveness of static signs and measures taken by road managers and will lead to substantial reductions in publication costs in newspapers.

Tools and activities

There are two main tools and activities. The first involves developing, implementing and operating an application to produce, exchange and re-use the changes in public road data needed for digital maps/travel planners/navigation. The second is a legal obligation. All public road managers will publish orders and measures that compel or prohibit and/or restrict or stimulate the use of public roads in a standardised electronic journal (staatscourant.nl). They will be obliged to use the application for orders and measures that will be valid for more than 4 months and are encouraged to use it for all orders, even if they are not finalised and are only published for consultation.

Stakeholders and resources

This involves all public road managers (418 local, 15 regional and national), digital mapmakers (5), NDW, the Ministry of the Interior and the Ministry of Infrastructure and the Environment. The latter body is leading the project and paying the initial cost of € 535,000 in 2012. From 2013, annual costs will be € 250,000 for the Ministry of the Interior (charged to the Infrastructure Fund and Municipalities Fund).

Milestones and monitoring

1/1/2013 the application will be ready and must be used by all road managers. The use of the application is monitored by the supplier of the system (e.g. number and type of publication per road manager, customer satisfaction, website traffic). The consequences of updates to maps and practical effects are not yet covered.

Contacts

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Over the coming years tests on the use of large scale traffic management will be carried out at various locations in the Netherlands. The aim is thereby to encourage traffic flow by applying traffic management not just to a small area but with broader approach. An example of this is the Practical Trial Amsterdam (Praktijkproef Amsterdam - PPA), which will test large scale network-wide traffic management throughout the Amsterdam region. This will principally involve roadside systems (primarily TDIs, VRIs and DRIPs) being utilised with large scale coordination, but will also test the impact of the simultaneous use of in-car systems to boost traffic flow. This is also relevant to priority area 4.

2.2 Action area 3 Continuity of traffic and freight management ITS services on European transport corridors and in conurbations

Activities aimed at implementation

Various Dutch companies are active internationally in the field of ITS services. The products and services that they develop are therefore usually suitable for use by end-users across European borders. The Dutch public authorities are also focused on being able to offer ITS services in Europe to end-users in a standardised way across borders. The Netherlands is therefore an active participant in EasyWay. Even though a commitment can only be given with regard to the Deployment Guidelines after the summer of 2012, the Netherlands has a positive attitude and a great deal of experience with the implementation of ITS applications (Actions 2.1, 2.3).

It has already been indicated in chapter 1 that there is intensive collaboration between public and private parties in the Netherlands with regard to dynamic network-wide traffic management. The use of a shared desk in the traffic control centres, the regional desk, will make it possible over the coming years to use roadside systems - and in-car systems in the longer term - more effectively to provide road users with information about abnormal situations. The agreements about a joint DVM Exchange will also facilitate effective collaboration. For road users and road managers this will mean that (policy) aims can be realised more efficiently. The Dutch approach, building on area-focussed utilisation, is pioneering in both a European and global context. Operational management takes place on a network-wide basis.

Current projects, initiatives and activities

In terms of ITS services and their use across borders, the Netherlands is not just looking at the mobility of persons. Efficiency in international freight shipping can have a very big positive impact on combating congestion on the road network. Over the coming years there will be a range of approaches to ITS in the logistics sector. One of the aims to be achieved is synchro-modality. In a synchro-modal transport system, all methods of transport can be utilised flexibly on the basis of collaboration between modalities (in contrast to competition between modalities). Depending on the requirements of the shipper and the available capacity of the modality and infrastructure, use is made of water (inland or short-sea shipping), rail, air and/or road. It is thereby important that efficiency gains do not stop at the national frontier. In advance of European agreement in this regard, a range of projects have already been initiated in the Netherlands. Examples include the Inland Waterways Dynamic Traffic Management Stimulus (Impuls Dynamisch Verkeersmanagement Vaarwegen - IDVV) and the Neutral Logistics Information Platform (Neutraal Logistiek Informatie Platform - NLIP).

INLAND WATERWAYS DYNAMIC TRAFFIC MANAGEMENT STIMULUS / IMPULS DYNAMISCH VERKEERSMANAGEMENT VAARWEGEN (IDVV)

Brief description

Rijkswaterstaat's Dynamic Traffic Management Inland Waterways Stimulus programme will be working on more reliable travel times and improved flow of inland shipping in the Netherlands until 2013. The programme is thereby stimulating inland shipping as an alternative for transport by road. The programme is thus preparing inland shipping for the growth of freight shipping as a result of the construction of the Tweede Maasvlakte. The smooth and safe flow of shipping can enable the Netherlands to retain its position as an international logistical hub.

The project is being carried out by Rijkswaterstaat as the manager of the main waterways, in close collaboration with other waterway managers, carriers, shippers, ports and terminals.

Objectives

The information infrastructure supporting advanced transport and traffic management systems must be improved in order to accommodate the predicted growth of 400% in inland container shipping over waterways. The focus is on:

- Improved traffic management systems (Authorities)
- Single Window (Barge Shipping, Maritime)
- Neutral Logistic Information Platform
- Advanced transport information services
- Multi-modal/synchro-modal transport systems
- Innovative Logistics

Contact

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Stakeholders involved

Ports of Rotterdam/Amsterdam, Terminals, Barge operators, Shipping agents, Customs and others.

Milestones

- Improved traffic management systems for waterway management: operational 2014
- Single Window for Barge Shipping, linked to the Maritime Single Window: operational 2014
- Set-up and governance of a Neutral Logistic Information Platform (Exchange of data B2G, G2G, G2B, B2B): decision in Q4 2012
- Advanced transport information services, pilots (2011- 2013)

Funding and Tools

Rijkswaterstaat (Waterways and Public Works Agency) € 100 million (2011-2013)

Monitoring

An internal monitoring programme has been set up. The desired outcome can only be indirectly measured as the growth in traffic will manifest itself over the next 20 years.

The removal of obstacles between companies and public authorities in the logistics chain will enhance the efficiency of logistical processes. It will also allow the shipping of goods to take place in a cleaner way. In the Amsterdam metropolitan area this is being done through the Seamless Connection project, for example, where practical innovations are being introduced into the market by means of pilots. The government is also working with the private sector on steps to remove unnecessary obstacles.

NEUTRAL LOGISTICS INFORMATION PLATFORM / NEUTRAAL LOGISTIEK INFORMATIE PLATFORM (NLIP)

Brief description

To achieve optimum availability and the efficient (re)use of information for and by the commercial sector and public authorities. This will be arranged (safely and with a low entry threshold) by means of a Neutral Logistics Information Platform (NLIP).

Objectives

By 2020 (all) companies and public authorities will communicate in a standardised manner via the NLIP. The open market platform and Single Window Trade & Transport (SWH&T) will be linked together and will share data while control (integrity and privacy) is retained by the owner, who decides who is granted access to his data and on what terms. Commercial operators will have developed many commercial apps that are linked to the open ICT platform and which support services such as synchro-modal planning. Public authorities will also have developed apps for harmonising inspections etc. The ownership structure of the open market platform will be shared between the private and public sector in a PPP arrangement. The compulsory provision of data to public authorities will be free of charge where possible. A charging structure will be developed for other data exchanges.

Contact

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Stakeholders involved

Strategic Platform Logistics (SPL), DHL (LSPs), ECT (terminals), EVO, Havenbedrijf Rotterdam (HbR), KLM (air freight), Ministry of Economic Affairs, Agriculture and Innovation, Ministry of Finance/ Customs, Ministry of Infrastructure and the Environment, Schiphol, VRC, TLN, Cargonaut, Portbase, Port of Amsterdam, Handling agents, Horticulture, Logius, Knowledge institutions (TU Delft), Rijkswaterstaat.

Milestones

Sessions with sounding board groups and decision-making points for the steering group are scheduled at various points during 2012. An information session is planned for November 2012 and the final decision will be made by the steering group in December. Implementation of some aspects will already start in 2012; new apps will be launched in 2013 and a large scale pilot will get underway. NLIP must be independent and permanently active by 2014.

Funding and Tools

€ 5.5 million from MIRT funds (long term funding for infrastructural projects) until 2014

Monitoring

At steering group meetings and reports in line with the top sector policy

Cross Border Management (Action 2.1)

Within the context of EasyWay neighbouring countries have developed cross-border management (CBM) to inform drivers about ongoing incidents or accidents and advise them about alternative routes to reduce time loss and disruption. In the Netherlands, CBM rerouting operates between Rotterdam and Antwerp, Eindhoven and Cologne and Arnhem and Oberhausen. Unofficial CBM also operates between the north of the Netherlands and Lower Saxony. The harmonisation of future Incident Management implementations is also taking place internationally at various levels. This will include consideration of the results of Easyway.

Demand management

Demand management is a tool which can further enhance the performance of the Netherlands' mobility system. In 2012 five regional pilots, the *mobility projects*, are exploring various innovative applications for demand management, whereby ITS is used as a tool (based on price and/or information incentives). The government will decide on the next step on the outcomes of these projects. Since the launch of the Better Utilisation programme, mobility projects have came under this programme. These projects are intended to gain experience with changing behaviour by means of financial stimuli (financial rewards for avoiding the rush hour) and *information stimuli* (such as tailor-made travel information). The primary objective is to persuade some road users to avoid the rush hour and reduce pressure on the road network during the rush hour. (action 2.4).

The mobility projects are running in four of the busiest regions in the Netherlands: Rotterdam, Utrecht, Eindhoven-Den Bosch and Arnhem-Nijmegen. Travellers earn a financial reward if they choose to avoid the rush hour. The projects with this reward system are: Spitsscoren A15 in Rotterdam, Slim Prijzen Regioring in Arnhem-Nijmegen; Spitsmijden in Brabant; Spitsvrij in Utrecht Oost and Spitsmijden A12 in Utrecht (action 2.4).

In all cases it has to be possible track each participant's route so that it can be established that travellers actually qualify for the financial reward. This therefore requires an ITS component (one or more); the mobility projects work with camera registration, GPS boxes in the cars and smartphones. (action 2.4).

In addition to the financial stimulus, some projects also work with *information stimuli* in order to encourage behavioural change. SpitsScoren Rotterdam issues participants with a smartphone with travel information to help them avoid the rush hour. Spitsmijden in Brabant also provides participants with advanced route information via a smartphone and a personal webpage.

2.3 Action area 3: Road safety and security

Activities aimed at implementation

Road safety in the Netherlands has been an important aspect of mobility policy for many decades. The number of deaths on the roads has fallen significantly since the 1970s. However, the government would like to reduce the number of road deaths further to a maximum of 500 in 2020. Measures to increase road safety cover education and enforcement, as well as the further development of IT applications that improve safety.

The large number of cyclists on Dutch streets means that vulnerable road users play an important part in road safety policy. The Netherlands has a very extensive infrastructure dedicated to cyclists. This includes cycle paths and cycle lanes, but also aspects such the fact that most traffic lights system in urban settings have separate traffic lights for cyclists, for example (action 3.4).

In some towns in the Netherlands (including Delft and Groningen) there are traffic lights with rain sensors which can give cyclists priority when it rains.

Current projects, initiatives and activities

Road safety for motorists is being encouraged by reducing drinking and driving, amongst other things. This is done not just through education and enforcement, but also by using more innovative methods. Hence an alcohol lock has been introduced which is built into the cars of heavy drinkers. Before being able to drive, they must perform a breath test to show that they have not been drinking. The car will not start if the test result is positive (action 3.1).

A great deal of research into behavioural effects has been conducted in the Netherlands. An example of this is UDRIVE, a large scale European Naturalistic Driving study. Compared to conventional research methods, this relatively new method provides a better insight into how hazardous situations arise and environmentally-unfriendly behaviour, and thus offers possibilities for making the traffic system safer and cleaner.

In order to combat the overloading of trucks, the number of Weigh-in-Motion points on the Dutch road network is being increased from five to twenty. At these sites the axle loading of trucks is weighed while they drive. If the vehicle is found to be overloaded, the vehicle details and automatic number plate recognition are used for enforcement action. Attention is also being paid to trucks with regard to avoiding accidents. A large scale practical study with some 2,400 vehicles showed that driver assistance systems help reduce the number of deaths and injuries requiring hospital admission on the primary road network (actions 3.1, 3.4).

In the context of road safety policy, maximum speed limits have also been carefully investigated. The Dynamax project on primary roads is gathering data about the impact of dynamic maximum speed limits on motorways. Matrix boards allow different speed limits to be applied at different times of day. Various factors are being measured, including carbon emissions and the behaviour of road users. Motorists have been found to respect the dynamic speed limits and modify their behaviour well. Virtually no undesirable side-effects have found (action 3.1).

HeERO-NL (ACTION 3.2)

Brief description

The project is aimed at implementing and testing Pan European eCall in order to be ready for the move to operational service. The aim is that the eCall signal will not only be transmitted to the emergency services, but also to the traffic control centres manned by Rijkswaterstaat and any local road managers, so that the negative effects of an accident on traffic flow can minimised as effectively as possible.

Objectives

A working infrastructure for the receipt and processing of eCall within the emergency service chain, the use of the information for traffic management, an investigation into the use of eCall when transporting hazardous substances.

Contact

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Stakeholders involved

Rijkswaterstaat, Police, Traffic Control Centres, RDW National Vehicle and Driving Licence Registration Authority

Milestones

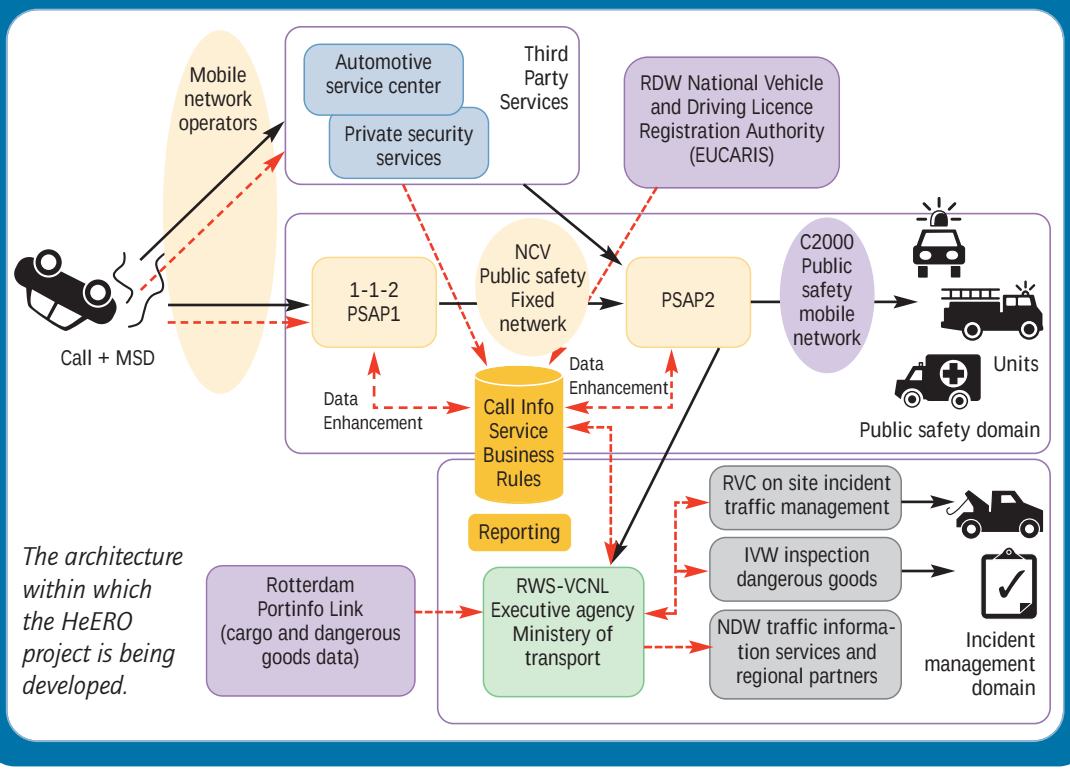
06 2012: infrastructure testing completed, 12 2012: evaluation completed, 02 2013: infrastructure modified to EU results, 06 2013 modified infrastructure tested, autumn 2013 move to operational service.

Funding and Tools

Total Budget: € 1.6 billion, EU € 700,000, Police € 380,000, Waterways and Public Works Agency € 350,000, Directorate-General for Mobility and Transport € 250,000.

Monitoring

Testing, evaluating and checking EU interoperability is part of the HeERO-EU project.



The architecture within which the HeERO project is being developed.

2.4 Action area 4: Integration of the vehicle into the transport infrastructure

Activities aimed at implementation

Both public and private parties in the Netherlands are looking into how vehicles and infrastructure can be integrated with one another. This is primarily evident in a number of practical trials that have taken place within environments which involve public/private collaborations as well as science, and which focus on R&D and not simply implementation. One example was SPITS, a government-supported collaboration between companies and knowledge institutions that ran until 2011 which aimed to highlight innovations. This was done by developing prototypes that demonstrated the validity of the SPITS system. The SPITS system consists of an on-board unit, roadside infrastructure and a back-office service centre. Communication between these elements was an important aspect of the platform. Traffic lights and other road equipment in several towns and cities in the Netherlands use vehicle identification. An example is FREILOT, which lengthens the green phase at traffic lights and also gives speed advice in order to reduce travel time and fuel consumption for trucks in the town of Helmond.

Current projects, initiatives and activities

Trials are currently taking place at various locations in the Netherlands whereby vehicles communicate with roadside systems or with one another. The trials that involve in-car systems, such as those in the Eindhoven/Helmond region, are thereby particularly representative. When the existing roadside systems are replaced, as much account as possible will be taken of the future of cooperative systems. Even though developments are not yet sufficiently advanced to allow cooperative modules to be incorporated when replacing roadside systems, Rijkswaterstaat is actively adapting the roadside systems' architecture so that it will be able to communicate with vehicles in the (near) future. Account is thereby also being taken of developments within EasyWay, CEN, ETSI and platforms such as the Car2Car consortium and the Amsterdam Group together with CEDR and ASECAP. The outcomes of the European developments and definitions are currently not yet sufficiently clear. Links are being made where possible.

VEHICLE-INFRASTRUCTURE COMMUNICATION

Summary

Rijkswaterstaat will develop or commission a *cooperative module* which is capable of wirelessly exchanging data with other cooperative modules which can be located either in vehicles or within roadside infrastructure. The common term within the international standardisation community is C-ITS station (Cooperative – ITS station) and broadly takes four forms:

- Road side ITS station (roadside)
- Central ITS station (roadside)
- Vehicle ITS station (in-vehicle)
- Nomadic ITS station (in-vehicle)

Rijkswaterstaat's focus is on systems for the roadside. It is thereby important that there is harmonisation with other road managers and the automotive industry through the Amsterdam Group. A cooperative module must fit seamlessly within the concept of both roadside stations and other traffic systems (e.g. VRIs). In order to create international interoperability, standards are being developed by CEN and ETSI on behalf of the European Commission (M453).

Objectives

In order to respond to current trends and developments and the desire to facilitate *self-organisation* within the traffic process as much as possible by providing tailor-made information and advice, a transition is required from current tools to a mix of infrastructure-linked and vehicle-linked tools. In order to facilitate this transition, it is important to invest in enabling technology; without cooperative roadside stations there can be no cooperative functionality and no shift from collective to individual traffic management and customised information. In order to make the Dutch roadside cooperative, a cooperative module needs to be added to the roadside stations, to be able to link these to the systems used for the underlying road networks (such as VRIs) and/or to enable them to work autonomously. Rijkswaterstaat is about to start a large scale replacement programme, and therefore has a unique opportunity to make the Dutch roadside cooperative. A cooperative module is vital in order to achieve this.

The plan is to replace 1000 roadside systems in the first phase from 2014, and to fit a large proportion of these - depending on location and situation - with vehicle-infrastructure communication functionality. The ambition is to conduct tests with these systems at the DITCM test site in 2012 and 2013. This relates not just to motorways, but also other roads and traffic lights.

Contact

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Milestones

- Start drafting specifications (with the market as much as possible using the P3ITS method)
- Start FOT with one or more cooperative applications and test interoperability technology at DITCM test site
- Compare FOT results and interoperability test with first version of specs
- Draw up definitive specs
- Integration of cooperative module into roadside stations

Funding

Rijkswaterstaat (Waterways and Public Works Agency), Ministry of Infrastructure and the Environment.

In developing cooperative systems the focus is on speed harmonisation in order to prevent shock wave traffic jams (currently the cause of 22% of traffic jams).

DITCM (DUTCH INTEGRATED TEST SITE FOR COOPERATIVE MOBILITY)

Summary

DITCM is regarded as the leading Dutch testing ground for the development and testing of intelligent mobility services and systems. This includes all future systems for the purposes of Better Utilisation, *cooperative services* and traffic management systems which are growing in both technical and organisational complexity. Representatives of public authorities, knowledge institutions and the private sector (currently more than 20 parties) are working together within DITCM.

DITCM consists of two aspects:

- the development and dissemination of pre-competitive knowledge and insights in an open, innovative development environment and the formulation of a shared programme approach (roadmap) for traffic management and cooperative systems.
- The sharing and joint use of (costly) facilities in order to accelerate testing and development.

The advantages offered by DITCM are better harmonisation between public authorities, the private sector and knowledge institutions in terms of development, standardisation, architecture (at total chain level), testing, certification and European harmonisation. Examples of potential projects that benefit from this in the near future include the Practical Trial Amsterdam (Praktijk Proef Amsterdam) (in-car element), Better Utilisation and Dynamic maximum speed limits (Dynamax) in-car. DITCM is located in the Brainport region where all sorts of projects are taking place, from concept development through to deployment, in an open development environment. This environment encompasses: ITS Test Infrastructure Instrumented Roads, both Urban (Helmond, Eindhoven) and Highway. Instrumented vehicles, user groups, full range test activities, analysis activities via control centre/driving guidance lab.

Objectives

The fact that this fully operational environment has the maximum range of facilities means that various scenarios can be tested in a controlled setting before they are rolled out elsewhere in the Netherlands or in Europe at locations where the mobility problems actually occur. DITCM has identified three programme approaches within which the partners specifically expect (pre-competitive) shared innovation to be effective: *Cooperative systems and the human factor*, *development environment for cooperative systems* and *effect studies for cooperative systems*. DITCM is positioning itself as the driving force behind the continuing development and realisation of the Smart Mobility roadmap for the Netherlands (with a Pan-European perspective). In addition, it also serves as an accelerator for rolling out solutions from the Netherlands to the rest of Europe. With DITCM the parties intend to be at maximum readiness for Horizon2020 and future developments of the ITS Action Plan.

Contact

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Stakeholders involved

NHTV,TNO, TU Eindhoven, Fontys Hogeschool, TU Delft, Beter Bereikbaar Zuid-Oost Brabant, Automotive NL, NXP Semiconductors, Logica, TomTom, Vialis, Technolution, Municipality of Helmond, Brainport Development, Samenwerkingsverband Regio Eindhoven, DAF, IBM, Nokia, Peek Imtech, Province of Noord-Brabant, Ministry of Infrastructure and the Environment.

Milestones

- 11 2010: start of collaboration
- 05 2011: Formalisation of collaboration in LOI
- 2010-2012: Test site established
- 10 2012: DITCM roadmap
- 2012-2013-2014: initiation of various projects in DITCM environment, both national and international
- 2014 and beyond: roll-out solutions which have been *proven* in DITCM to other locations

Funding

partner contributions (programme approaches, roadmap) and project financing (procurement, programmes)

PRACTICAL TRIAL AMSTERDAM (SEE ALSO ACTION AREA 1)

Brief description

The Amsterdam Practical Trial (PPA) is a large scale trial of Coordinated Network-wide Traffic Management and traffic information in the Amsterdam region. The project's principal is the Ministry of Infrastructure and the Environment. The project is being carried in a collaboration between Rijkswaterstaat Noord-Holland, Amsterdam City Council, the province of Noord-Holland and the Amsterdam metropolitan area. The trial runs from 2012 until 2014.

The advantages offered by DITCM are better harmonisation between public authorities, the private sector and knowledge institutions in terms of development, standardisation, architecture (at total chain level), testing, certification and European harmonisation. Examples of potential projects that benefit from this in the near future include the Practical Trial Amsterdam (Praktijk Proef Amsterdam) (in-car element), Better Utilisation and Dynamic maximum speed limits (Dynamax) in-car. DITCM is located in the Brainport region where all sorts of projects are taking place, from concept development through to deployment, in an open development environment. This environment encompasses: ITS Test Infrastructure Instrumented Roads, both Urban (Helmond, Eindhoven) and Highway. Instrumented vehicles, user groups, full range test activities, analysis activities via control centre/driving guidance lab.

Objectives

The main objective of the PPA is to achieve shorter and more reliable travel times in the Amsterdam region. These are to be achieved through the intelligent coordinated use of: 1) information systems on, above and alongside the road (roadside) and 2) information systems in vehicles (in-car, smartphones and navigation systems). Public/private collaboration is playing an important role both in obtaining data and in disseminating it to road users. In addition to the objective of improving the traffic flow in the Amsterdam region, the PPA will also be conducted in order to assist with the development of national policy for traffic information & traffic management and the traffic management 2030 development strategy (Rijkswaterstaat).

Stakeholders involved

The Ministry of Infrastructure and the Environment (Rijkswaterstaat Noord-Holland, Accessibility Directorate General), Amsterdam City Council, Amsterdam metropolitan area and the province of Noord-Holland. There is close collaboration with the private sector, particularly on the in-car element of the trial.

Milestones

- 06 2012: agreement between central government and region regarding execution of Phase 1
- 08 2012: market study on in-car information services
- mid-2013: results of the roadside element (Phase 1) due to become available
- second half of 2014: results of the in-car element to become available
- end of 2014: completion & evaluation of the trial

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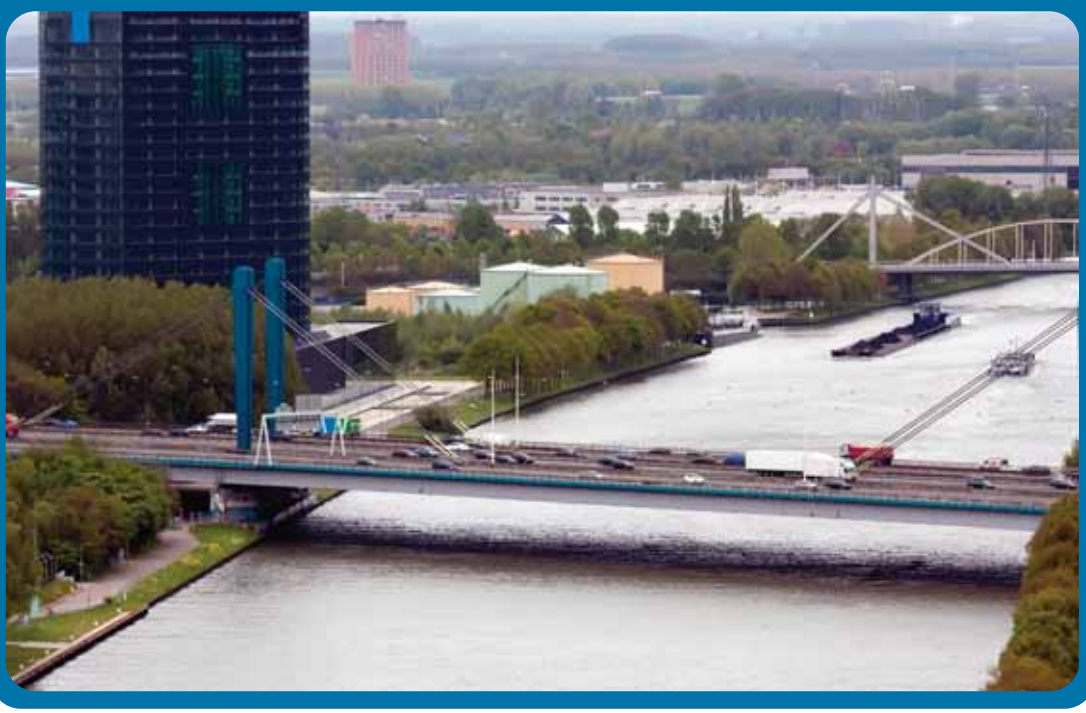
Funding

Ministry of Infrastructure and the Environment, Infrastructure Fund

Monotoring

Establishing the impact is an essential aspect of the trial, whereby the effects of measures at the roadside and in-car will be assessed in conjunction with one another. Because of its complexity, the trial will be carried out in phases. Each phase will be evaluated (beforehand & afterwards), on the basis of which a go/no-go decision will be made regarding the next phase.



3

Developments in relation to priority actions

3.1 Introduction

The priority actions from the European ITS directive focus on the interests of road users in both passenger and freight transport. Road users in the Netherlands and Dutch road users in other European countries will benefit from harmonised information and safety services. The Netherlands supports the focus on the implementation of priority actions. However the development phases vary. For most actions it is currently unclear which specifications will be made mandatory. That is why a decision has been made to set out the proposed development for each priority action and indicate which areas for attention are thereby important. This will sometimes lead to an overlap with earlier chapters.

- Multimodal travel information services;
- Real-time traffic information services;
- Safety related traffic information;
- Harmonised eCall facilities;
- Information services for truck parking;
- Reservation services for truck parking.

3.2 A Multimodal travel information services

Multimodal travel information services for road users relate to the option of using other modes of transport in combination with or instead of your own vehicle when travelling door-to-door. Since 2008 (Mobiliteitsaanpak/Mobility Approach) this has been the guiding principle for traffic information services. The focus in the Netherlands is currently on public transport and parking.

Travel information relating to public transport has been provided for 20 years through the national organisation '9292'. Initially this was telephone-based, but now mostly via the (mobile) internet. Up to now it has worked on the basis of timetables with updates in the event of a disruption. At the end of 2012, however, it will work from real-time data from vehicles and railway traffic management. The requirements for the delivery of this data to the national portal and its dissemination are or will be standardised in such a way that other parties can also provide up-to-date information services at the minimal cost for connection and delivery (around € 100 per month). The Dutch Railways has been providing up-to-date information about train travel - such as travel times, departure times, maintenance works and travel costs - since 2010 free for users and accessable during the journey via mobile internet applications. The travel planners on the NS site and 9292 are also available in English. Other providers now also provide information about public transport, including urban and regional transport, using GOVI data.

In view of the travel behaviour of many road users, travel information about car parking (including P+R) is very important, particularly when travelling to unfamiliar destinations. However, the provision of such information is still very limited. Only information about (semi-)static aspects such as location, tariffs and capacity can be obtained with regard to barrier-controlled car parks. However, these only account for 2% of all regulated car parking provision in the Netherlands. The availability of up-to-date or dynamic information about the occupancy of these parking facilities is more limited and mostly disseminated using roadside signs (PRIS). The providers of mobile services restrict themselves to a small selection of car parks.

Work is being done on setting up an independent National Data Portal for Parking Facilities (NDPv). Public and private providers of parking facilities are thereby collaborating on providing the data required for information services both before and during the journey. The service providers who are the potential users of this data also have a role to play in this. At the time of writing, no definitive decision has been taken about the execution. More car park data is expected to become available over the coming years. This will be based on the (semi-) static data about regulated on-street parking, such as geographical and charges information, from the National Parking Register. In addition, there is also up-to-date data about the availability of parking spaces in barrier-controlled car parks and a roadside system that indicates whether there are still spaces (and sometimes how many) or whether the facility is (almost) full. Data about the availability of street parking spaces may follow at a later stage.

3.3 B Real-time traffic information services

Real-time traffic information services are already available on a large scale and in many forms, both pre-trip as during the journey. The range of services (many of which are free for end-users) is generally facilitated by the National Traffic Databank (Nationale Databank Wegverkeersgegevens - NDW). This is a collaboration between road managers (17 completely and 7 provinces partially) for the period 2008-2013. They supply up-to-date information about traffic flows (e.g. travel times, speeds and densities) and the status of roads (e.g. incident/congestion reports, openings/closures, roadworks). The status data aims to cover the major link roads across the entire country (around 25,000 km). The flow data will cover a basic network of 5,800 km in 2013 (including all 3,200 km of national highways) which is used by approximately 60% of traffic. NDW is currently being evaluated. The participating road managers are expected to opt to continue the service for the sake of dynamic network-wide traffic management and information. In addition, lessons are being learnt to improve working methods. Over the coming years the public element will primarily work on improving the availability and quality of status data. Private parties will principally work on improvements to the dynamic expectation or prediction of travel times on the basis of historical and current traffic data.

Predicted travel times or travel delays are becoming increasingly important for the logistics sector. It is thereby important that the data covers as much of the underlying road network including slip roads as possible. A traffic jam which causes a 10 minute delay is useful to know about, but it is also important to know that it takes 20 minutes to get from the motorway onto the secondary road.

3.4 C Safety-related traffic information

Safety-related traffic information is already a standard feature of traffic information services in the Netherlands based on of the data stream from NDW using the Datex (II) standard. Reports that correspond to the well-established and internationally recognised TISA list (such as drivers travelling against the flow, slippery roads or fog) are given the highest priority when being passed on. Commercial operators that use data from NDW have an obligation under their licensing agreement to facilitate information and advice from the central operational traffic leader (from Rijkswaterstaat/ Netherlands Traffic Centre VCNL) without interruption or filtering. A distinction is thereby made between serious emergencies and serious incidents. Only with the former category do the service providers have no scope to deviate and have an obligation to perform for the communication channels which they control (in other cases there is an obligation to make their best effort).

The Media Act (Mediawet) (art. 174) also stipulates that the government is authorised to interrupt media broadcasts (especially regional radio channels). However, this does not apply to all broadcasts across all media. With the serious incidents category service providers have some scope for deviating, but notification is harmonised - in consultation - as much as possible. The freedom they have often relates to travel and route advice that is provided as a result of an incident. This is also due to the fact that private parties use information from sources other than those used by the traffic managers (such as road users themselves).

Public data messages via Datex (II) and NDW remain a basic facility for traffic information. The commercial operators covert this to various media channels and target groups. Broadcast messages on the radio currently have the greatest reach amongst road users and will continue to do so over the coming years. RDS-TMC messages are also still important, particularly as a source for existing navigation systems which do not work on the basis of a SIM card subscription. The two commercial operators that broadcast TMC messages in the Netherlands give no guarantee that they will still be doing so in five years' time. In the unfortunate event that the decision is made to stop, this will only take place after discussions with the Ministry of Infrastructure and the Environment/Rijkswaterstaat about possible alternatives, taking account of international agreements about broadcasting TMC messages.

A possible alternative for the dissemination of coded messages via TMC is to do so via Digital Audio Broadcasting (DAB). DAB, as part of DMB (Digital Multimedia Broadcasting), is an interesting alternative/supplement to RDS-TMC and offers a number of advantages. These are not currently being used or investigated in the Netherlands. This is due to the fact that in the European context no DAB capacity/bandwidth has been reserved for traffic information services. Request to the Commission for a strong regulatory push for DAB/DMB transmission coverage across Europe to provide for TTI service capability, including bandwidth set aside within multiplexes for ITS delivery. There has been some legislation regarding embedded data service capacity being reserved but not specifically for ITS; this needs to be addressed for the future.

The following measures have been suggested in consultation with national experts for improving safety-related traffic information over the coming years:

1 Expansion of TISA list to include reports of hazardous air quality (toxic cloud or smog) and wind (gusts), particularly for high-sided and/or light vehicles (e.g. trucks and motorbikes).
2 Faster communication of calls to emergency services to traffic managers and service providers, particularly on local roads (e.g. obstruction on the road or closure of lanes).
3 Conversion of reports about events (input) into advice about sought behaviour (outcome), such as speed reduction and alternative route advice. In order to implement this one might encourage the use of dynamic navigation systems, for example.
4 As long as high numbers (e.g. ≥ 30%) of road users primarily rely on radio information messages while underway, consideration might be given to do this in English as well on a standard European frequency.
5 Supporting the transmission of safety reports from private sources via technology (e.g. CAN bus[7]) which are being developed by the automotive sector for in-car and car-to-car communication, and with the aid of professional user groups (such as bus drivers, truckers and taxi drivers).
6 Formal regulations for all providers of up-to-date traffic information for obligatory and immediate dissemination of serious safety messages in a form appropriate to the communication channel. This is necessary in order to close the information chains and because of government policy regarding the active publication of all public data without usage conditions for user.
7 Research into the way users deal with messages through various media and the drafting of recommendations to make this more effective and less voluntary over time. The elaboration of these measures requires further discussion within the European and national frameworks.

3.5 D Harmonised eCall facilities

The Netherlands is preparing for a harmonised implementation of an eCall service in 2015 for new cars, particularly by implementing the HeEro project. The Netherlands is particularly interested in cutting response times to incidents by an average of 4 minutes. This will significantly improve safety and traffic flow for other traffic participants (plus financial impact). Full implementation will also lead to about 10 fewer road deaths per year. Operational implementation depends on an unambiguous European obligation. Discussions with national experts have raised the following areas for improvement, among others:

1 Defining clear standards for activating automatic emergency broadcasts in vehicles, e.g. by airbags activating or registration of G-force in the CAN bus.
2 Obligation for new trucks and commercial vehicles to ensure equal treatment for drivers and in the interests of emergency services, traffic managers and other road users. An accident with such a vehicle often has much more significant consequences than those involving a car, particularly when transporting hazardous substances. This can be effectively supported with a digital consignment note instead of a paper one.
3 As long as there is no obligation in place, voluntary use can be encouraged by raising awareness and providing rewards (e.g. Lean and Green award), e.g. to shippers and insurers of freight transport.

4 Enshrining in law the automatic communication of calls to emergency services to traffic management control rooms and then onwards as safety reports within the traffic information.
5 Preparation of decentralised traffic control centres and embedding this within the approach to Incident Management.
6 Support eCall and bCall with *after-market* products, e.g. through CEN standards, because of the potential benefits for safety and traffic flow, provided that the number of false reports remains limited, e.g. with notification by certified organisations.
7 Integration in vehicle requirements for annual vehicle safety testing and the consequences of implementing this.
8 Research use by vulnerable road users such as cyclists and the elderly.
9 Clear communication to users about the nature of the facility and a notification, e.g. how follow-up is organised and what the target response times are.
10 Supporting an open vehicle platform for eCall, which will aid an accelerated implementation of eCall systems with value added services.

Further discussions in an EU and UN context are required for the elaboration of these proposals.

3.6 E Information services for truck parking

Information services for secure truck parking are still in the early stages of development but will become increasingly important for both public and private sector. In the Netherlands, the biggest problem is an existing and structural shortage of parking spaces, particularly on the international corridors on the German border and around the port of Rotterdam. The strict enforcement of driving times and rest periods and the driving ban on Sundays and bank holidays in Germany also determines the behaviour of drivers on the basis of instructions from shippers, carriers and insurers. If they have to stop and there is no free parking space, they may stop their vehicle at a location that jeopardises road safety (such as on the hard shoulder). Foreign drivers in particular, with little money, are unlikely to leave the primary roads to find a peaceful and secure paid parking space.

Accessible information services for drivers and the planners of freight traffic are therefore needed in order to ensure that the scarce parking spaces are used optimally. The international nature of freight transport requires European information services. That is why it is proposed that the International Road Transport Union's (IRU) database be developed further with improved agreements and systems for updating and the provision of static data (what parking facilities are available and where are they located) and current information (how busy they are). This begins with a clear definition of which paring facilities are to be included in terms of static data and the size of the facility. TLN already supplies the IRU database with static data.

The Netherlands wishes to actively contribute to finding solutions to the above problems, and has an interest in doing so. Firstly to maintain road safety, and secondly in order to encourage personal safety and combat crime.
The following measures are therefore been implemented:

1 A € 25 million project to improve the quality and capacity of rest areas on and along national highways where security is a problem. In order to ensure that international transport corridors meet the need for secure parking places, safe truck parks on the underlying road network are being called upon. These should be privately financed in principle. The Netherlands will not create any free secured parking places on the main road network, as this would constitute unfair competition for the private parking operators. The service locations on the main road network will be improved in terms of *light and visibility* in order to fulfil basic quality requirements. Research will also be conducted into the possibility of limiting stays at rest areas on the primary roads and thus encourage the use of private sites on the underlying road network. This will also look at the option of paid parking or maximum stays at the rest areas.
2 A public/private taskforce in the Netherlands is organising the auditing and the issue of LABEL certificates for truck parking areas in accordance with the European agreements. It is creating and maintaining an information system which clearly indicates the levels of safety and service at certified truck parking areas. On the basis of this information, shippers, transporters and insurers can enter into national and international agreements about parking trucks. By February 2012 25 parking locations had already been certified. The taskforce forms part of a broader Road Transport Sector Approach to Criminality (Aanpak Criminaliteit Wegtransportsector) agreement.
3 Encouraging shipping organisations and insurers in general to attach greater importance to secure parking, particularly for high value goods. E.g. by providing a budget or rewards for this.
4 Traffic signs have been developed and installed along the main highways that point to secure and certified parking locations on adjoining roads. These are installed at the request and expense of the operator of the parking facility, irrespective of the lock rating.
5 Central government will not be investing in extra sensors and dynamic signs to indicate the remaining capacity at these parking facilities, since individual systems are more cost effective. Existing signs and sensors can still be used for this. If local authorities or private operators wish to pay for this, this would be an option.
6 The ParckR trial in Brabant to predict and optimise the usage of parking facilities along the Moerdijk-Venlo corridor (primarily on and near the E34/A67 up to the border), partly using Floating Vehicle Data and a free application for Android smartphones. This also offers a platform for the target group to exchange information with one another. If, at the end of 2012, it transpires that this approach is working well, it can be quickly and easily scaled up to other international corridors. It is thereby important to note that the usage information does not have to be extremely accurate in order to be effective. It is simply important to make clear on time when sites are (almost) full or emptying.

3.7 F Reservation services for truck parking

Reservation services for truck parking do not currently exist in the Netherlands they are theoretically possible for secure sites. There is currently 1 site available which offers this and has a 4 lock rating. Over the next year a large site will be added (for around 250 trucks) near Breda. Because it has its own parking problems near the port, Rotterdam City Council is working on the development of a paid truck parking facility which offers reservations as part of the development of the area, including its own bye-laws and security staff to prevent illegal overnight stays and nuisance.

Given the trend of increasing requirements being stipulated by shippers and insurers with regard to parking locations, the need for such sites and services is set to increase. However, the development of facilities is lagging behind. The facilities offered are currently too limited for the development of commercial reservation services.
Private operators are prepared to invest in sites but need permission from local road managers, and they have problems with the not-in-my-backyard attitude of local residents. A European stimulation scheme might help to find solutions more rapidly, for example as part the TEN-T subsidies.

The Netherlands regards the development of reservation services as something to supplement information services, but this could be taken into account during the proposed further development of the IRU database. The following issues are important for the development of reservation services:

1 There must be easy access for each parking site which allows reservation requests to be processed by a number of service providers. This will prevent each facility having to build its own reservation website, which would make it impractical for truckers and planners to use the system.
2 Research business case service providers and provide temporary support if necessary.
3 Encourage reservation services for both immediate (≤1 hour) and longer term bookings.

4

Items for attention, recommendations from NL to EU

4.1 General

The reporting in the preceding chapters should demonstrate that the Netherlands is actively committed to the use Intelligent Transport Systems on a larger scale in order to achieve its policy objectives in terms of traffic flow, safety and quality of life. This is clear from the execution of programmes, pilots and projects and from the large investments that are and have been made. This is happening in many areas and with several spearheads in which harmonisation, standardisation and regulation are important aspects. Liaison (roadmaps) between stake-holders such as the various road managers, the automotive industry and service providers is crucial. A long-term structural commitment is vital for the serious development of services that can make an effective contribution to policy goals (by market players and/or public authorities). Engagement, influence and possibly guidance from the European Commission are invaluable in this regard. This chapter sets out a number of issues which the ITS community in the Netherlands feels are important and require action by the Commission and other member states.
For this reason, the Netherlands is highlighting a number of issues in this chapter. We will also indicate in this chapter where we can make a contribution to our European partners.

4.2. Specific wishes and questions to the Commission

Availability of information obtained by public authorities

Over the coming years the Netherlands will be implementing the open data policy as set out in the PSI more extensively. Hence by 2015 at the latest no usage conditions will be attached to the provision of public data and no more than the marginal costs will be charged.

An exception will be made for large quantities of data that are continuously pushed and for which clients want certainty of delivery for a fee based on the full cost price. This is expected to result in the creation of more innovative services and the social benefits will increase. The chances of this happening will be greater if other European countries also make their public data available in a similar way so that European services can be developed. We thereby particularly foresee opportunities for better travel information, thanks to static, statistical and status road data (such as roadworks and traffic measures).

Human factors

Human factors are important in the Netherlands when determining policy and making choices. System integration also requires attention being paid to human factors. Tests will be carried out with in-car systems in various places in the Netherlands over the coming years. When these systems are used, the way in which road users process the information and then modify their behaviour is very important. European attention for this area would provide an extra stimulus.
It is vital that more research is conducted into the effect of these systems on road safety over the coming years. Very little research has so far been conducted into the persuasive effects of these systems. How does a trigger from a system lead to behaviour from the driver that is beneficial for road safety?
The ITS plan and directive will certainly lead to more standardisation in the specification of technology. Now that the range of warning and information systems is growing steadily, it would be a good idea to develop an EU-wide view on the harmonisation of signals. The EU has already made a statement about this previously.

The shift from the current systems to a situation where the driver can rely on systems to take care of driving tasks should be considered and investigated. The driver is currently (almost always) in charge of the vehicle. As more technology becomes available to support the driver in emergencies (automatic braking seems to be a good first candidate for this), the driver may well rely on this. This could have a negative impact on road safety in the period when the systems are not yet sufficiently developed.

Cooperative systems

The Netherlands is generally in favour of the use of open platforms and standards as the basis for the rapid development of services within the ITS field. The initial steps that have already been taken in this regard in the automotive sector should be followed up. If the eCall system is implemented as a multifunctional vehicle platform, we would urge that that system be opened up to other cooperative applications, including those of third parties. If different frequencies are used for different appliances and the corresponding protocols to exchange information between vehicles and infrastructure, there is a need to ensure that there can be no interference.

Paperless driving

In the logistics chain there are many benefits to be achieved in terms of efficiency. The Netherlands is promoting the possibilities offered by synchro-modality. In order to ensure that this is truly efficient, it is very important that existing paper barriers are removed. The accelerated authorisation of digital consignment notes throughout Europe should be given a high priority.

eCall

eCall is primarily being implemented on road safety grounds. In the Netherlands benefits are particularly expected in terms of optimising Incident Management and traffic management. The Netherlands would therefore like to see the obligation extended to other new vehicles as well as cars, especially trucks. To extend the benefits to existing vehicles, the Netherlands is in favour of conditional retrofitted systems. We would like to see a situation where cargo details can also be reported using via eCall (linked to digital consignment notes) if this impacts upon safety and traffic management. For example, in emergency situations the emergency services could benefit from knowing what cargo a truck is carrying. We would also like to see clarity regarding the requirements to be laid down for retrofitted eCall systems, e.g. through CEN standards and certification.

Safety related traffic information

Safety-related information is already provided in the Netherlands. We do see that the RDS-TMC system has a finite future. The Netherlands would like to see this development being monitored effectively. If Digital Audio Broadcasting (DAB) becomes the new platform, the Netherlands underlines that enough capacity needs to be reserved for traffic informationDatex II does offer a practical format in which this type of information can be exchanged, but this says nothing about the medium that will be used and its implementation with respect to road users. The Netherlands would like to see a clear choice made in this regard in a European context, and has made a number of proposals in chapter 3, including the expansion of the TISA list to include hazardous wind and air quality as well as the transition from reports about

events (input) to intended behaviour (outcome) such as speed reduction and alternative route advice. Formal regulations are also required for all providers of current traffic information for immediate and unfiltered dissemination of serious safety messages in a form appropriate to the communication channel.

Questions in this regard include the issue of whether the public bodies should take responsibility for the availability and/or dissemination of safety-related information and what role the private sector can be expected to play.

Truck parking

In order to significantly improve the information relating to truck parking there need to be standards for datasets and data exchange, together with agreements and systems for updating and disseminating static data such as location-finding and the allocation of spaces. The current IRU database offers enormous potential but it must be made more user-friendly. Information from the database is available now, but the raw data cannot be freely accessed; the recommendation is to release the raw data to service providers. This will require an investment.

For reservation services it is important that each parking location does not develop its own system but can be integrated into a Europe-wide service. This type of service should offer an opportunity to reserve parking at short notice (<1 hour) but also further in advance.

The service providers have indicated that the business case for developing a new service is complicated. It would be desirable to investigate whether temporary support could lead to a quicker roll-out.

International cooperation

The Netherlands supports a European harmonised implementation of ITS. Programmes such as EasyWay and ELSA are very important in order to speed this up. For this reason, the Netherlands would like to see urgent clarification about the financing of these programmes. The corridors in the TEN-T network can be used as spearheads for implementing harmonised ITS services in a programma-based manner. Where possible available European resources might be bundled for this goal on a conditional basis.

4.3 What the Netherlands can offer

Public-private partnership

The Netherlands has a great deal of experience with collaborations between public and private parties. This includes dialogue at strategic, tactical and operational levels which is organised by setting up standing public/private bodies. Within these bodies agreements are reached about issues such as - for example - the division of roles between road managers and service providers and the creation of certified truck parking facilities, including signs for the parking facilities along the main roads.

Cooperative systems

The Netherlands is happy to volunteer to be a testing ground for ITS. The Netherlands has a history of traffic and ITS innovations, particularly large scale pilots and first implementations. These include mobility projects whereby user behaviour and demand management are influenced in highly alternative ways, the integrated multi-modal transport approach adopted by the Port of Rotterdam, and the demonstrations of in-car and cooperative systems that have been organised over the last decades. Examples which could also be used in other countries include DITCM and DVM exchange.

Exchanging data and information

Reliable, available and usable data and information are of the utmost importance for many new ITS services. Experience of the exchange of data and information with regard to various aspects of mobility has been and is being acquired very rapidly in the Netherlands. This applies to road traffic, public transport, parking and the logistics chain. There is also experience on both nationwide projects and regional activities.

Multi-modality and synchro-modality

There is a great deal of experience in the Netherlands of combining modalities both in relation to passenger transport and in the logistics chains. This is done by linking infrastructures effectively, but also by ensuring that the information chains join up well. More than just combining modalities, synchro-modality involves being able to choose a modality at the last minute.

Truck parking

The ParckR trial is underway in the Rotterdam-Venlo corridor to predict and optimise the capacity of parking locations with assistance from Floating Vehicle Data and a free application for Android smartphones. This also offers a platform for the target groups to exchange information. If, at the end of 2012, it is found that this approach is working well, it can be quickly and easily scaled up for other areas.

Abbreviations

BABW	Administrative Provisions (Road Traffic) Decree (Besluit administratieve bepalingen inzake het wegverkeer)
BAS	Policy Consideration System (Beleids Afwegings Systematiek)
BZK	Ministry of the Interior and Kingdom Relations (Ministerie van Binnenlandse Zaken en Koninkrijksrelaties)
CAN	Controller Area Network
CBM	Cross Border Management
CEDR	Conference of European Directors of Roads
DITCM	Dutch Integrated Test Site for Cooperative Mobility
DRIP	Dynamic Route Information Panel (see VMS)
EC	European Commission
EL&I	Ministry of Economic Affairs, Agriculture and Innovation (Ministerie van Economische Zaken, Landbouw en Innovatie)
ELSA	European Large Scale Actions
EU	European Union
FEHRL	National Road Research Centres in Partnership
GNV	Large scale Network-wide Traffic Management (Grootschalig Netwerkbreed Verkeersmanagement)
GOVI	Borderless Public Transport (Grenzeloos Openbaar Vervoer)
GPS	Global Positioning System
HTSM	High Tech Systems and Materials
ICT	see IT
IDVV	Inland Waterways Dynamic Traffic Management Stimulus (Impuls Dynamisch Verkeers-management Vaarwegen)
IenM	Ministry of Infrastructure and the Environment (Ministerie van Infrastructuur en Milieu)
IM	Incident Management
IT	Intelligent Technology
ITS	Intelligent Transport Systems
KiM	Netherlands Institute for Transport Policy Analysis (Kennisinstituut voor Mobiliteitsbeleid)
KLPD	Dutch National Police (Koninklijke Landelijke Politiedienst)
MOGIN	Mobility and Geo Information Netherlands (Mobiliteits- en Geo Informatie Nederland)
ND-OV	National Data Warehouse for Public Transport (Nationale Databank OV-gegevens)

NDPV	National Data Warehouse for Parking (Nationale Databank Parkeervoorzieningen)
NDW	National Traffic Data Warehouse (Nationale Databank Wegverkeergegevens)
NL	The Netherlands
NLIP	Neutral Logistics Information Platform (Neutraal Logistiek Informatie Platform)
NWB	National Roads File (Nationaal Wegenbestand)
PRIS	Parking Route Information System
PSI	Public Sector Information Directive
RDS	Radio Data System (for RDS-TMC, see also TMC)
RDW	RDW National Vehicle and Driving Licence Registration Authority (Dienst Wegverkeer)
RWS	Waterways and Public Works Agency (Rijkswaterstaat)
SPL	Strategic Logistics Platform (Strategisch Platform Logistiek)
SWSR	Intelligent Working, Intelligent Travelling (Slim Werken, Slim Reizen)
TDI	Slip road filtering system (Toerit doseer installatie)
TMC	Traffic Message Channel
TOA	Time of Arrival
VI	Traffic Information (Verkeersinformatie)
VM	Traffic Management (Verkeersmanagement)
VMS	Variable Message Sign
VRI	Traffic control system (Verkeersregelinstallatie)
WiM	Weigh in Motion
Wob	Government Information (Public Access) Act (Wet openbaarheid van bestuur)

Footnotes

1 *CBS Statline (consulted june 2011), table vehicle fleet*

2 *This is the basic network of around 5,800 kilometers of motorways and other important provincial and city roads that are monitored by NDW*

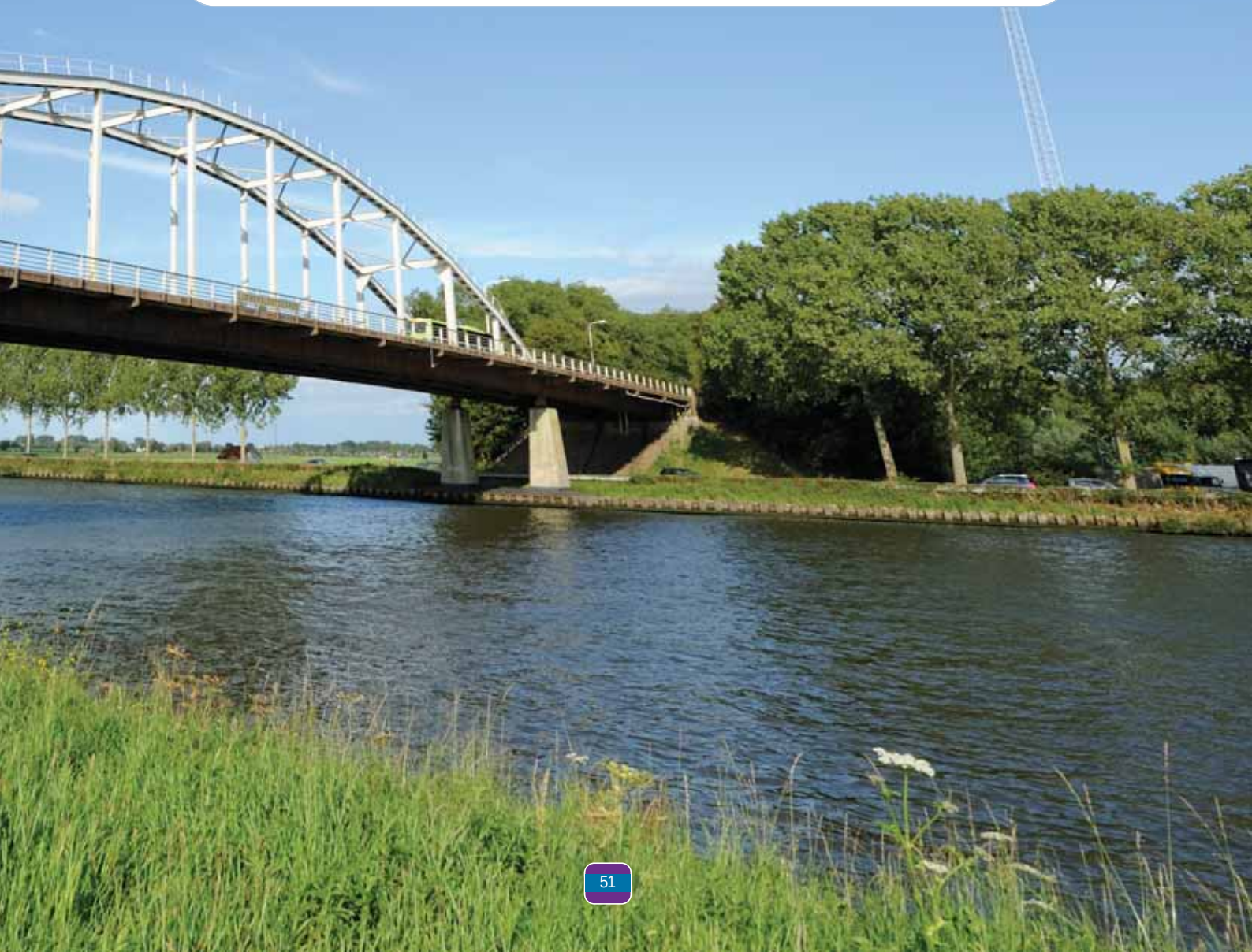
3 *Structural vision Infrastructure & the Environment - NMCA Calculations*

4 *Mobility policy Knowledge Institute (kiM): Mobility balance 2011*

5 *www.politie.nl/kennemerland/nieuws/informatiealcholslot.asp*

6 *Kennisinstituut voor Mobiliteitsbeleid (KiM) (2012) 'Verklaring reistijdverlies en betrouwbaarheid op hoofdwegen 2000-2010: empirisch onderzoek naar aspecten van bereikbaarheid'*

7 *CAN bus (controller area network) is a vehicle bus standard designed to allow microcontrollers and devices to communicate with each other within a vehicle without a host computer. CAN bus is a message-based protocol, designed specifically for automotive applications but now also used in other areas such as industrial automation and medical equipment.*



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