

Sustainable Accessibility of the Randstad – Two Years On

Popular Annual Report 2009

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Foreword

How do you keep the Randstad sustainably accessible in the future? It presents a major challenge, accompanied by numerous knowledge-based questions. These questions can only be answered by taking a multidisciplinary approach. That's why we are working to mobilise all the available thinking power in the Netherlands and are seeking to train more researchers in this field as well as building the network between researchers and policy-makers so the knowledge being developed can also have an impact on actual practice.

In 2007 the Minister of Transport, Public Works and Water Management (V&W) therefore teamed up with his colleagues from the Ministries of Housing, Spatial Planning and the Environment (VROM) and Economic Affairs (EZ) to initiate a long-term research programme entitled Sustainable Accessibility of the Randstad (SAR). Since the second round the Ministry of Agriculture, Nature and Food Quality (LNV) has also participated in the process. All these ministries make a financial contribution. The SAR programme has been placed under the auspices of the Netherlands Organisation for Scientific Research (NWO), which also makes a financial contribution to the research and runs the programme secretariat.

The first four research programmes started in 2008. A second round followed in 2009 with a call for research proposals that emphasised the consequences of energy transition and climate change for the transport system in the Netherlands, and on synergy in urban networks and the traffic and transport system in the Randstad. The three programmes that were awarded subsidies in this second round are presented to you in this annual report. We also report on the activities of the other four research teams and the general activities that the SAR programme addressed in 2009.

Siebe Riedstra

Secretary-General of the Ministry of Transport, Public Works and Water Management

Chairman of the SAR Programme Supervisory Board



1 The second round: three new programmes added

2009 was dominated by the launch of the four programmes that were awarded funding in the first round (2008) and the organisation of the second round. The Programme Committee organised a special meeting on 14 January 2009 to encourage researchers to submit excellent new applications.

Nearly 40 researchers from various backgrounds gathered in Utrecht for an introductory meeting, not only to get acquainted with each other, but also to explore options for creating new knowledge together in the future by collaborating on research initiatives. The SAR Programme Committee eagerly anticipated multidisciplinary and interdisciplinary research proposals on energy transition and climate change and on synergy in urban networks. That was why a meeting was organised that specifically welcomed researchers from extremely diverse scientific backgrounds, bringing them together in the period when groups of university researchers could submit letters of intent. Hans Leeftang from the Ministry of Transport, Public Works and Water Management, who heads the Programme Committee, welcomed everyone to the event and immediately cut to the chase. 'You sit here as competitors, so we can imagine that you will be hesitant to reveal everything you're working on. Despite that, we hope that you will be able to achieve a mutually interesting exchange of issues and expertise here this afternoon.' Asking for a show of hands, Leeftang gained a rough impression of the various types of expertise present in the room. For once, the traffic experts were a minority. A broad spectrum of other social sciences was represented – from city planners and management experts to psychologists, economists and innovation scientists.

Shift in emphasis

'The reason why we are emphasising more specific areas in the second round,' Leeftang explained, 'is expressed in the three letters of our programme: the S for sustainability, the A for accessible and the R for Randstad. We were able to fund four excellent programmes in the first

round that primarily targeted the A. And now we'd like to have excellent programmes that mainly focus on the S and the R.' Moreover, he orated to his audience, we want those programmes to be multidisciplinary. 'So we are putting the following question to you this afternoon. When we look at the issues that need to be addressed, what combination of expertise do we need?'

The persons present then separated into four discussion groups. Two focused on Energy Transition & Climate Change; the other two looked at Synergy in Urban Networks. After everyone had introduced themselves briefly, propositions put forth by the participants were used to discuss issues that would be worth researching now, in the second SAR round. The scientists also talked to each other and the discussion table chairpersons from the Programme Committee about what the Randstad would gain from the availability of more scientific knowledge about the issues that had been raised. The aspect of which combinations of disciplines would be needed was addressed in passing, but the time was essentially too short. The discussions were therefore quickly resumed over drinks over a brief central feedback session.

Subsidies awarded in 2009

After the meeting, various research consortiums worked together to produce proposals. 22 letters of intent were received in total, 19 of which were developed into full applications. After thorough assessment, including interviews with all applicants conducted by international review committees, three research projects were awarded subsidies at the end of October. The following programmes received funding: CESAR, i-PriSM and SRMT.

* Climate and environmental change and spatial planning (CESAR)

Prof. M. Dijst (Utrecht University) in cooperation with the University of Amsterdam, Radboud University Nijmegen and Wageningen University and Research Centre

The CESAR programme will produce knowledge and tools for spatial planners who want to take into consideration the changing climate conditions in the low-lying Randstad region. To that end, the researchers will analyse the connections between spatial use and infrastructure, meteorological processes and human mobility patterns.

* Innovative pricing policy for sustainable mobility (i-PriSM)

Prof. E.T. Verhoef (VU University Amsterdam) in cooperation with Delft University of Technology and the University of Groningen

The scientists working in the i-PriSM programme are researching how pricing policy for both public transport and road transport by passenger vehicle can contribute to a more sustainable traffic and transport system in the Randstad. They are examining various modes of transport and transport technologies, as well as various types of vehicles, drivers and travellers. Knowledge and experience from the current project at the Ministry of Transport, Public Works and Water Management (Anders Betalen voor Mobiliteit) is being used by the researchers,

* Integral sustainable accessibility strategies (SRMT)

Prof. I. Hansen (Delft University of Technology), in cooperation with the University of Twente, the University of Amsterdam and VU University Amsterdam

The scientists from the SRMT programme are looking at spatial use, location choice, multimodal transport networks (combinations of different forms of transport), mobility behaviour and mobility policy. This allows them to research various ways of keeping the Randstad accessible in a sustainable manner, addressing the issue from a broad perspective.

The following sections will discuss these programmes in more detail.



Dr Martin Dijst is Professor of Social Geography, focusing specifically on urban development and spatial mobility. He works at the Faculty of Geosciences at Utrecht University.

Photo by Fred Trappenburg © Geomedia

2 How weather, space and the mobile person influence each other

The CESAR programme ('Climate and Environmental change and Sustainable Accessibility of the Randstad') will produce knowledge and tools for spatial planners who want to take into consideration the changing climate conditions in the low-lying Randstad region. To that end, the researchers will analyse the connections between spatial use and infrastructure, meteorological processes and human mobility patterns. They will also examine how this knowledge can be used in practice in the field of spatial planning. Researchers from Utrecht University, the University of Amsterdam, Radboud University Nijmegen and Wageningen University are working together on the programme.

In truth, Martin Dijst has been less and less occupied with 'pure traffic and transport' in recent years. He is more accurately looking for areas of interaction with other themes, such as daily schedules, health and social cohesion. "I try to look at mobility from a broad perspective. What does it mean for people that they spend a large part of their time on their way to somewhere? How does that influence all sorts of social processes? What kinds of consequences does it have for human health, but also for the population demographics in certain neighbourhoods? Many policies and many scientific studies look at where people work or live, but people spend a great deal of their time as a 'passer-by' or 'visitor'. That has consequences for the support base for facilities and should also be a factor in spatial planning policy. It is also relevant to consider how people experience space. Humans are sensory beings. It matters what kind of weather it is and whether it stinks. It also matters whether a neighbourhood offers lots of diversions and has interesting public facilities, and whether it has lovely old buildings to look at. All these things influence behavioural choices, including choices for mobility. And I want to know exactly how that influence works."

The mobile person as a recurring theme

The fact that Dijst links mobility to health and social cohesion allows him to build bridges between different disciplines and policy fields. “I see mobility as an integrating recurring theme. If you take the mobile person as your point of departure, you can integrate all sorts of policy fields. That sometimes presents a problem for government ministries.” The CESAR programme, as part of SAR, also emerges from linking various societal problems to mobility. “When the call for the second round was issued, I immediately saw opportunities to intertwine expertise from different disciplines. I first set out in search of meteorologists who are also working with spatial considerations, and I found them in Wageningen. When I went looking for a tangible application for the knowledge to be developed, my search brought me to Urban Strategy at TNO. It is an interactive decision-making support system for determining how different changes in the surrounding area would affect the quality of life in the physical environment. Other people that I’m working with include Luca Bertolini from the University of Amsterdam, Stan Geertman here in Utrecht and Rob van der Heijden from Nijmegen. My sense is that all the pieces of the puzzle have fallen into exactly the right places now. I already knew some of these researchers, but the people from the exact sciences in particular were unfamiliar. The next step is that I also want to expand the scientific network in this field internationally.”

Keeping journals

CESAR is about the consequences of climate changes at the level of day-to-day weather and how people respond to it. “It is possible that the summers will be hotter. In that case, the cities will become some sort of heat islands. Will people walk and cycle less if that happens? Will they leave the cities in their cars to go to the countryside, where it’s cooler? And what about the progressively milder winters? Will people walk and cycle more if the winters are less cold? And how is that expressed in different groups? The elderly are often less able to deal with heat than younger people. What consequences would that have for the population demographics in cities, for example? And what locations would become more popular – or less popular – for people to go to? We hardly have any insight into these types of mobility choices. In CESAR, we will be taking systematic stock of all of these things.

We will achieve this in part by combining weather data with the Dutch Mobility Survey. But we will also be conducting field research by having a regular panel of people keep journals. I will give them a tool that will make it possible for them to record their direct perceptions of the weather. How people perceive the weather is a highly subjective experience. Besides the weather and the choice to use specific forms of mobility, we will also be looking at the links to how public spaces are structured. We know that the presence of green spaces and water are accompanied by certain weather effects. We also know that people feel safer and more protected in certain types of buildings. All these things affect individual choices about mobility behaviour, but how, exactly?"

Man with a mission

The first challenge is to decipher the complex relationships between urban buildings and infrastructure, meteorological processes and behavioural patterns with regard to mobility, residential choices and car ownership. CESAR will then integrate the knowledge into an improved version of Urban Strategy in order to support spatial planning to offset the requirements imposed by the climate, bringing them into balance with other interests in the Randstad area. Knowledge transfer mechanisms will be developed and tested for that purpose and a 'climate-proof' Urban Strategy model will be developed and applied in participative workshops. "That means that transferring knowledge to policy-makers, city planners and other people working with space and mobility poses a separate task for us. And before we can convey that knowledge, we have to accomplish the mission of winning people over for our ideas. Climate-proof planning for space and mobility is not yet considered an everyday affair in government circles, although there certainly are a number of municipalities that are already working on it. Many administrators and policy-makers envision the climate issues on a larger scale. But you can actually do something at the local level – not just adapting, but mitigating the impact. The challenge for us is to use simple examples to show exactly how it can be done. That is why we immediately start involving the future knowledge users in our programme."



Dr. Erik Verhoef is Professor of Spatial Economics, working at the Faculty of Economics and Business Administration at VU University Amsterdam.

3 Insight into actual behavioural impact of price policy finally available soon

The team behind 'Innovative Pricing for Sustainable Mobility' (i-PriSM) are researching how pricing policy for both public transport and road transport by passenger vehicle can contribute to a more sustainable traffic and transport system in the Randstad. The researchers at VU University Amsterdam, Delft University of Technology and the University of Groningen are examining various modes of transport and transport technologies, as well as various types of vehicles, drivers and travellers. Knowledge and experience from ongoing experiments will also be used.

Travel pricing – for passenger vehicles or public transport – currently enjoys extensive public interest. The issue is not limited to the much-discussed kilometre price, but also includes the definitive implementation of the RFID public transport card. "Once it has replaced the *strippenkaart* ticket throughout the Netherlands, the government will have a price instrument that offers the opportunity, for example, to differentiate travel prices much more widely," Erik Verhoef explains. "What effects would such policies have on mobility? To what extent would people swap their cars for public transport if driving becomes more expensive and public transport is cheaper?" That is one of the questions that i-PriSM will answer later.

Warming the researchers' hearts

Verhoef has been working on mobility pricing for a long time. "I completed my PhD in 1996 with a dissertation on this topic. I must have seen five or six government pricing plans pass by since then. In the meantime, disregarding the 'cyclical interests' of the politicians, science has continued making calm progress. Experience was gained abroad; new technology was created. All these developments made it interesting, for instance, to use models and surveys to assess how mobility pricing would work here in the Netherlands. We already researched this area in the predecessor to i-PriSM: A Multidisciplinary study of Pricing policies in Transport (MD-PIT). But now, in i-PriSM, the experiments currently taking place with all sorts of pricing

projects make it possible for the first time to assess the actual behavioural effects of pricing. See, that is a situation to warm a researcher's heart. New technological possibilities, the actual implementation of mobility pricing, and then the substantial focus on traffic and transport in relation to urban development that was added in comparison to MD-PIT... All that makes i-PriSM an extremely innovative programme."

Relationship with urban development

Verhoef: "We know from experience that you shouldn't put too much hope in chasing people out of their cars. When the price of coffee goes up, you don't see everyone suddenly drinking tea. Automobile drivers all have their own reasons for continuing to use the car, and those reasons will not change all that quickly. The Ministry of Transport, Public Works and Water Management predicts that the introduction of road pricing (the 'kilometre price') will lead to a 15% reduction in car traffic. At the same time, public transport use will only increase 6%. That substitution is clearly far from complete." Another theme in i-PriSM is the relationship with urban development. "We also want to know what effects there will be on households and businesses and so on where their choice of location is concerned. In the short term, people may well primarily take steps that are related to time: leave the house earlier, or later. In the longer term, pricing policy may play a role in the relocation behaviour of households and businesses."

Policy competition

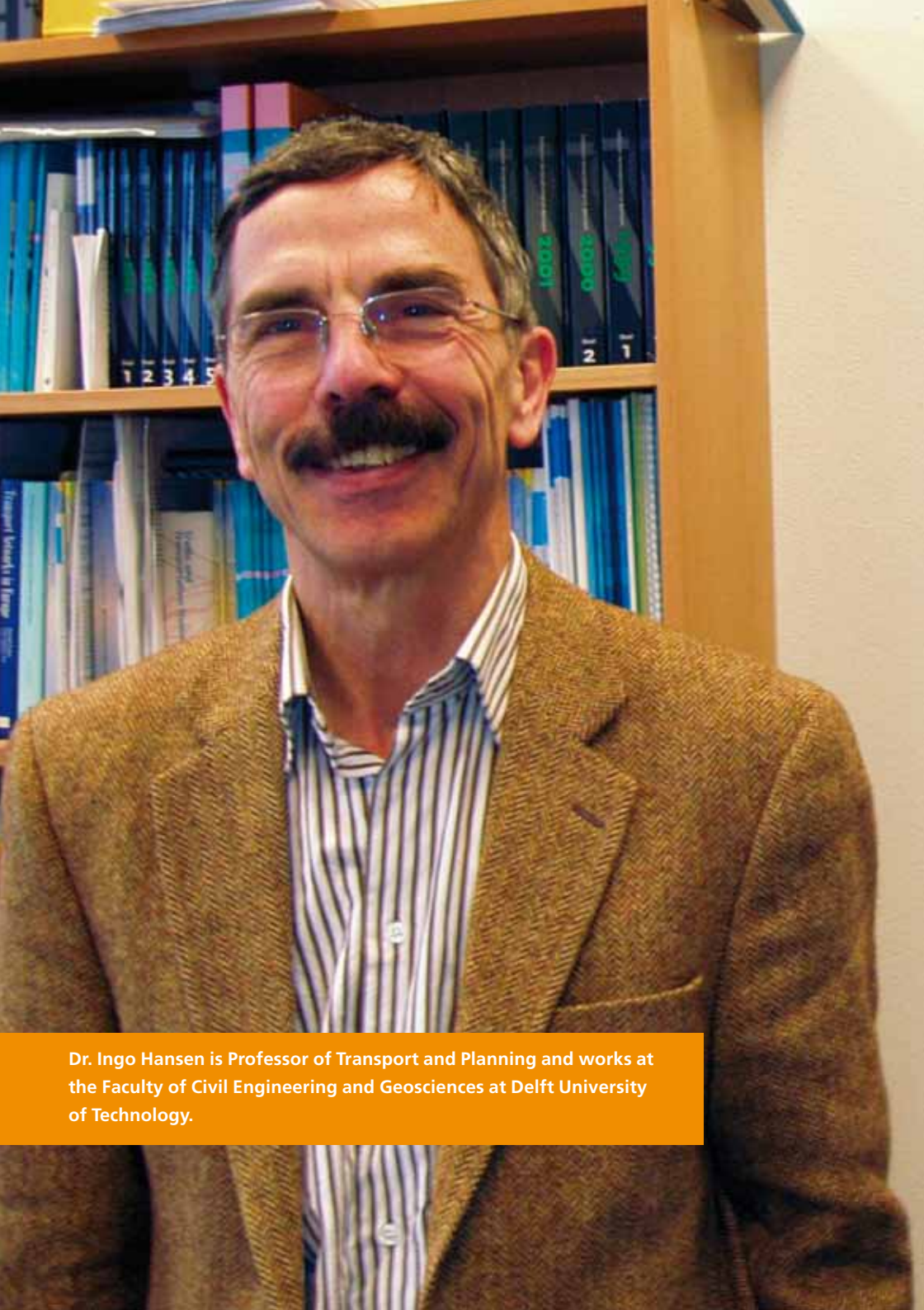
A third aspect that i-PriSM addresses is pricing implementation problems. Verhoef: "The transition process from the current situation to the future situation frequently receives very little attention, although it is necessary. Just consider the acceptance problems with road pricing and the RFID public transport card. It is about households here, but also about the role and position of stakeholders like the ANWB road association and the local government authorities. Pricing is currently primarily a matter for the national government, but the policies of the provinces and municipalities will also become relevant. They are also working on rush-hour taxes and air quality policy, which produces an interesting field of tension. The policies of the national government and of other government authorities may

compete with each other if the various levels of government primarily focus on their own interests and stop looking at how they affect the bigger picture. A nice example of such an issue is the industrial estates that any self-respecting city is eager to build. The end result is that we have too many of them in the Netherlands. Or a situation like the fuel levies in Luxembourg. They're just slightly lower than in Germany and Belgium, and that is not a coincidence. It allows Luxembourg to benefit from drivers who deliberately plan their route to refuel in Luxembourg. One of our research questions is how you deal with the tension between the national government and other government authorities in the implementation of pricing policy."

The government authorities are not the other stakeholders working on pricing, either. Private parties could just as easily use forms of pricing. "This could include privately financed infrastructure, such as toll roads. The question is what place the market is assigned in this configuration. If you allow the market to have an influence, how should it look? How high will prices go if for-profit organisations decide on pricing, and how will that in turn affect the behaviour of the travellers?"

A familiar consortium

Verhoef will be working with researchers he already knows well. "It is the same consortium as the researchers who worked on MD-PIT. That presents a major advantage, since we've already eliminated our most important mutual problems with the language." The consortium consists of spatial economists and traffic economists from VU University Amsterdam, traffic psychologists from the University of Groningen, and transport planners and management experts from Delft University of Technology. "Our programme is structured in such a way that two or more of the different groups involved in the programme are always collaborating on the sub-projects. That multidisciplinary cooperation is not only something that this topic begs for; it is also good for the development of the groups as such. It allows us as economists to learn a great deal from the psychologists, and the reverse is undoubtedly also the case. Verhoef is looking forward to the significant influx of data from current mobility projects which use pricing, such as the rush-hour avoidance project (Spitsmijden) and the experiment with road pricing in Amsterdam. "We will be able to compare the behavioural effects later, and will likely be able to draw conclusions that will certainly be useful for further policy. There is interest in our research, in any case."



Dr. Ingo Hansen is Professor of Transport and Planning and works at the Faculty of Civil Engineering and Geosciences at Delft University of Technology.

4 Public transport as the backbone of the Randstad of the future

The scientists from the ‘Strategy towards sustainable and reliable multi-modal transport in the Randstad’ programme (SRMT) are looking at spatial use, location choice, multimodal transport networks (combinations of different forms of transport), mobility behaviour and mobility policy. This allows them to research various ways of keeping the Randstad accessible in a sustainable manner, addressing the issue from a broad perspective. The programme is a collaboration between researchers from Delft University of Technology, VU University Amsterdam, the University of Amsterdam and the University of Twente.

“If we want to keep the Randstad accessible in future in a sustainable manner, it is not possible without using all sorts of different forms of public transport. On the strength of that conviction and my own background in traffic analysis, I brought a number of people with various expertises together to see whether we can use a multidisciplinary route to find a multimodal approach.” Ingo Hansen is not averse to a bit of complexity and ambition. He prefers to combine analyses, models and insights from economics, spatial planning, traffic research and management studies.

Never again sitting on the Intercity express service stuck behind the slow train

Hansen is the man behind a series of tools that can predict the travel times of the trains with extreme precision, down to the second. The research he has done in the past ten years may ultimately result in train timetables expressed not in minutes, but in units of less than a minute. He is responsible for a series of expansions to the Train Number Tracking system used by ProRail, which constantly registers when tracks are occupied or empty, and monitors the status of signals and switches. This information makes it possible to optimise use of the existing rail infrastructure, catch

up on delays more efficiently, and eventually give traffic controllers access to a real-time decision-making support system to facilitate intervention in the event of system malfunctions. In summary: “Once this works, you will never again be sitting on the Intercity express service stuck behind the slow train.” Hansen’s research is one of the leading initiatives in the field world-wide. “The railway here is just as busy as in Switzerland and Japan, but more vulnerable. If we can also improve the technical conditions, such as the outdated overhead contact system, signal houses and switches, then we’ll have the most efficient railway system in the world.” And now there is also the SRMT programme in SAR, which will result in integral strategies that seem very remote from the world of timing trains down to the second. However, appearances can be deceiving. “Our programme will ultimately deliver more effective coordination and various designs for transport junctions, transport networks by road and rail, and property development around the key locations and development areas in the Randstad. The public transport system as a whole will also have the potential to become more attractive and reliable using the knowledge we develop. Less waiting, fewer delays and better connections between the different modes and lines of transport. All these things have positive consequences for prosperity, accessibility and the environment.”

Reducing travel resistance in public transport travellers

Hansen: “In our models, we combine high-intensity built-up areas around station locations - where people can live, work and recreate – with optimal accessibility by public transport, in all relevant modalities. In the past, we did not have sufficient capacity to display the effects of more accurate modelling of public transport systems in such a way that people could obtain a realistic impression of their travel time and their travel resistance.” Travel resistance? “That is your travel time plus the costs you incur for the trip – including the time you wait, for example. Public transport involves a relatively high travel resistance in chain mobility due to waiting times during transfers and, for instance, problematic transport before and after. As a result, the travel resistance for a traveller taking public transport may on average reach as much as twice the amount as the straight travel time for a person travelling the same route by car. Not strange at all, in other words, that public transport ranks low on the list of options, except for destinations in the centre of large cities.”

Hansen wants to reduce travel resistance in public transport by making transfers much easier thanks to optimal connections. “In the end, it will make the percentage of public transport in the modal split much higher than it is now.”

Hybrid buses are the future

Hansen’s researchers are taking existing regional transport models and calibrating them based on actual observations. The models are unleashed at the network level of e.g. the North or South Wing of the Randstad. “It presents a significant mathematical undertaking with quite a few combination problems due to all the variants we take into account. It requires a great deal of intelligence and calculating time. We will ultimately be able to show which variants of transport and spatial structure will have specific influences on the economy and the environment. Our research looks at the station locations that have the most potential, so it will not be an overall design for the Randstad as a whole. We are basing our choices on the spatial plans of the municipalities and property developers. Another starting point is the existing infrastructure for public transport in the conurbation. No major new investments are needed in the short term to optimise it. See, if we were to base our research on the widespread introduction of electric cars, for instance, you would essentially be looking at a scenario that costs a lot of money and a lot of non-renewable energy. For the time being, there is simply not enough electricity available from renewable sources to power all those cars. I am a much bigger proponent of optimising the railways and using hybrid buses, for example. They do still use a small diesel engine, but they combine it with electric wheel hub motors and regenerative braking, like in the *Whisper* now used in Apeldoorn. I see much more potential for this in the shorter term than, for instance, the hydrogen-powered buses that are currently being experimented with in Amsterdam.”

No express trams stuck in traffic

The SRMT programme is cleverly constructed. “The spatio-economic project headed by Piet Rietveld at VU University Amsterdam offers insights into the economic potential of key locations. That provides input for projects

3A and 3B run by Erik van Berkum at the University of Twente, which will show us which junctions and networks will have the most potential. The urban development project headed by Luca Bertolini at the University of Amsterdam is researching how the countries around us are doing in terms of innovation in public transport networks and urban architecture. How have those innovations been implemented and how have the barriers been overcome? Which measures were taken by which stakeholders? We can also learn from Japan, where transport companies invest in residential neighbourhoods and recreational options at the end of their rail lines. Bertolini's project focuses on bringing different stakeholders together and giving them food for thought. Project 4, headed by Rob van Nes here at Delft University Technology, will yield new modules for the government's multimodal regional transport models. It will give us more realistic modelling of transport flows. Project 5 headed by Rob Goverde, also from Delft, looks at the capacity of the networks. Those high-frequency services we anticipate seeing will of course have to actually be possible within the constraints of space and time. Otherwise you're putting your train, bus or express tram in the middle of traffic congestion. Projects 4 and 5 also provide input for 3A and 3B, which are researching what optimal transport networks would look like in terms of travel time, operating costs, returns on investment and influence on the surrounding area."



5 Programmes from the first round have been launched

The first four research programmes received funding in 2008. For the teams behind these programmes, 2009 was dominated by hiring and training the PhD students and post-docs and setting up internal groups to act as a sounding board.

The four programmes from the very beginning have now been running for over a year. In this section, the programme leaders talk about what they did in 2009. They were also asked to indicate what the most policy-relevant results of their programmes will be.

Eric Molin (Synchronizing networks): “first paper already published”

“Our researchers primarily spent the past year doing desk studies and fine-tuning the questions to be addressed by the programme. We also wrote a paper already, which was accepted and presented at the meeting of the Transportation Research Board (TRB).¹ In addition, we held our first shared session in October with the entire team of researchers and supervisors.” The first two PhD students started work in February and March; the third started in October after some delay. The post-doc researcher will start in July 2010. As far as policy-relevant results are concerned, the ‘super network model’ will give policy-makers a model that they can use to analyse and assess accessibility consequences of developments in urban planning and mobility. “We will be developing a standard for accessibility based on the convenience for individuals to carry out activity programmes, taking into account the fact that individuals carry out certain activities in the company of other individuals. We have already taken an important first step in that direction,” Molin says. In general, the programme will ultimately be able to answer the following questions:

1 Liao, F., T.A. Arentze, H.J.P. Timmermans (2010), Supernetwork approach for multi-modal and multi-activity travel planning, Paper accepted for presentation at the 89th Annual Meeting of the Transportation Research Board, Washington, D.C., will be published in Transportation Research Record.

- Which measures/developments in the field of location, ICT and transport networks will be effective in promoting internal accessibility in the Randstad and how significant are the accessibility effects of these measures/developments? In other words: which super-network concepts are feasible and have good potential for improving internal accessibility in the Randstad?
- Which super-network concepts are feasible in view of the conditions (perceptions, preferences, activities) that travellers impose, and what role can ICT and travel information play in that context?
- Which super-network concepts are feasible in view of the conditions imposed by the providers of transport services and location-based facilities, and which improved coordination mechanisms are effective for achieving the desired super-network concepts?
- How can feasible and high-potential super-network concept be designed in concrete (i.e. space-specific) ways for the Randstad, and how significant will the anticipated accessibility effects of these concepts be in the short term and the long term?

Bert van Wee (The value of recreation): “international session in preparation”

“We have also been conducting desk studies and finalising the design of the PhD projects,” Bert van Wee states. Nearly all the PhD students and the post-doc researcher have been appointed. “We already took the initiative to hold a special session at the World Conference on Transport Research (WCTR) in Lisbon, in July 2010. We hope to present our findings from the relevant literature there. We are also checking to see if we can compile a special edition of a magazine based on our papers.”

Van Wee expects to be able to answer the following policy questions:

- What are potentially interesting options for recreational locations in the agricultural areas that will open up?
- What types of recreational forms have high potential at which locations in the Netherlands, under which long-term conditions?
- What options are there for arranging for recreational traffic to take place outside peak travel times, depending on the place, time and type of traveller?
- What forms of recreation at which locations could contribute to a more attractive business climate for foreign companies?

- What forms of collective transport to and from recreational areas seem to have good potential, and under what conditions?
- What types of recreational activity seem interesting from an economic perspective on the one hand, and a spatial and mobility perspective on the other?
- What roles could government authorities adopt to stimulate forms of recreation that are considered socially desirable?

Lóri Tavasszy (Sustainable multimodal freight transport system): “Intensive cooperation with the Ministry of Transport, Public Works and Water Management”

“We truly started work in May, which was also when all the PhD positions had been filled. We now have a finalised research plan. We primarily worked on taking stock and acquiring knowledge and data to support the Randstad Flow Database. Two papers have already been presented at international conferences – in Peking and at the first International Conference on Transport and SCGE Modelling in Tokyo in August, which coincided with the celebration of 400 years of Japanese-Dutch trade relations – and we have already had two meetings of the entire programme. One was also attended by a colleague from abroad, Dr Atsushi Koike. We also held a PhD course. And we are now part of the project for the long-term road map for freight transport which the Ministry of Transport, Public Works and Water Management is setting up. We are consulting with the Ministry and other stakeholders to determine the best way for us to link the outcomes of our research to the work being done by the model-builders and policy-makers.”

Policy questions that will receive a contribution from Tavasszy’s programme include:

- What are the logistic needs of the businesses that use the Randstad infrastructure now and in the future?
- What facilities need to be developed in the field of multimodal infrastructure and services?
- What policies for urban distribution are needed to ensure a sustainable supply of goods to the cities in the Randstad?
- What will be the future volume of freight transport in the Randstad, the nature of the supply chain and the split across the different modalities?

- How are international supply chains and the national industry connected?

Harry Timmermans (TRISTAM): “all the PhD students have started”

“In our programme as well, the PhD students – who all started before the summer – have primarily been occupied with taking courses, conducting desk studies and developing conceptual frameworks in more detail.”

With regard to policy-relevant outcomes, the programme headed by Timmermans will produce the following:

- The results of sub-project 1 can be used to assess the influence of travel information on network performance.
 - The results of sub-project 2 can be used to assess the impact and effectiveness of travel information on accessibility.
 - The results of the third project will offer insight into the scope of unintended external effects of travel information. The model that will be created will be able to help planners and policy-makers assess the probable consequences of the new generation of travel information in terms of spatial factors such as a shifting demand for space.
 - Finally, the results of the fourth project will shed light on how to organise the road transport market in such a way as to maximise prosperity, assuming the presence of ICT that complements travel.
- Surprisingly, under certain circumstances, if a single organisation had a monopoly on both road management and information provision, it could be a better situation for society than the presence of two companies that operated these activities separately. This conclusion could be important in designing a market for road traffic. It is also important to have a workable economic model that makes it possible to analyse the economic effects of introducing travel-complementary ICT.



6 Wonderful public debut/ debate by SAR researchers

Surrounded by electric cars, chunks of super-smart asphalt, examples of sustainable services at Schiphol, and ‘serious games’ on laptops to facilitate better spatial planning, the NWO programme on Sustainable Accessibility of the Randstad (SAR) made its debut before a broader audience. It all happened on 4 November 2009, at the Innovation Relay Event for Water, Transport and Mobility at the former Valkenburg Air Base, near Leiden.

The opening of the Innovation Relay Event was attended by Minister Eurlings and other senior officials and started with a flashy film clip and a discussion on stage. Debate chairman Lennart Booij asked Wim Kijken, Secretary-General of the Ministry of Transport, Public Works and Water Management² and chairman of the Supervisory Board for the SAR programme at that time, what he would like to see happen at the end of the Innovation Relay Event. “That we’re all completely intoxicated... on new ideas!” Another point that was raised in the opening debate was that various parties – the government, the knowledge sector and the industry sector – would need to dare to take risks and be vulnerable to achieve true innovation. “Dare to say honestly to the other person what you need from him,” Eurlings said.

Knowledge can sometimes solve problems

At the end of the afternoon, it was time for the representatives of the research groups that started work in 2008 in the framework of Sustainable Accessibility of the Randstad. Chaired by Henk Meurs, consultant with MuConsult, professor at Radboud University Nijmegen and a member of the SAR programme committee, the researchers defended propositions on sustainable accessibility of the Randstad. The debate between the panel of researchers and the participants in the room addressed such topics as the huge increase in freight transport, the topic covered by Professor Lori Tavasszy, and the increase in recreational traffic, discussed by Professor

² Now appointed Delta commissioner.

Bert van Wee. The topics of discussion also included the use of ICT to facilitate accessibility, in the form of travel information, and the conversion of services into digital formats. “Is knowledge always the solution to our problems?” asked one person from the room. “Definitely,” answered Bert van Wee, who is involved in nearly all the SAR research programmes. “Because we still know far too little about a number of mechanisms, for instance in the field of traveller behaviour. And when we know more, we can in any case reap the easier fruits more effectively too.” People also asked about the extent to which everyone in the Netherlands has the same understanding of what constitutes ‘good accessibility’, while others warned that consumer preference patterns are sometimes subject to change. “We have to be careful that we do not make our transport policies too supply-driven,” stated one policy-maker from the Ministry. Another warning suggested that it would be inadvisable to expect too much from ICT and internet where accessibility is concerned. Caspar Chorus from Delft University of Technology, for instance, stated that the internet would not be able to replace our mobility behaviour.

Propositions from the SAR debate on 4 November

Transport network: general

- Optimal networks for car, bus, train and tram do not automatically represent an optimal transport system. (Van Wee, on behalf of Molin)

Increase in freight transport

- The Randstad cannot handle double the amount of freight transport. (Tavasszy)
- There is no strategic vision for freight transport in the Randstad. (Tavasszy)

Spatial planning

- Better coordination of modalities must be combined with intensification of activity locations around multimodal junctions. (Van Wee, on behalf of Molin)

Managing behaviour through travel information

- You're an idiot if you play with ICT. [referencing the Dutch fireworks safety campaign] (Chorus, on behalf of Timmermans)
- Advanced travel information systems make it easy to plan (complex) mobility chains. (Van Wee, on behalf of Molin)
- No accessible Randstad without accessible travel information. (Chorus, on behalf of Timmermans)

Increasing importance of recreation (and recreational traffic)

- Workplace accessibility is becoming less important, while accessibility of recreational facilities is becoming more important. (Van Wee)
- There are many more alternatives for recreational activities than for other activities. (Van Wee)
- We have absolutely no idea how people will spend their recreational time if trends involving energy, climate or travel prices change dramatically. (Van Wee)

Dialogue with users

- The development of scientific knowledge becomes more productive (or more pointless?) in a dialogue with knowledge users (programme committee).■

Talking over dinner

The last part of the event in which the SAR programme played a role was the Diner Pensant. One of the tables at the dinner was chaired by programme committee member Professor Hugo Priemus. The topic of discussion was 'What sort of spatial planning is needed for the development of sustainable intermodal traffic and transport networks at the level of the cities and the Randstad?'. The guest speaker at the table was Kees Maat, who completed his PhD on a related topic under the supervision of Priemus only a few days before the Innovation Relay Event. Bert van Wee also joined the dinner and the discussion; the other seats around the table were occupied by interested visitors from the relay event. The dinner ended with a major thunderstorm, which made it quite difficult for the diners to understand each other – as if the organisers had arranged for fireworks to close the evening.



7 Who's who in SAR?

The programmes in the second round received funding at the end of October, which means that it is not yet possible to list the names of the people heading the programmes.

First Round



Synchronizing Networks

- Programme leader: Dr. Eric Molin, e.j.e.molin@tudelft.nl
- Modelling of supernetworks, PhD student Feixiong Liao, f.liao@tue.nl, supervisor Theo Arentze, t.a.arentze@tue.nl
- Use of supernetworks, PhD student Chao Chen, c.chen@tudelft.nl, supervisors Eric Molin, e.j.e.molin@tudelft.nl, and Caspar Chorus, c.g.chorus@tudelft.nl
- The governance of supernetworks, PhD student Sara Levy, s.levy@fm.ru.nl, supervisor Karel Martens, k.martens@fm.ru.nl
- Design of supernetworks, PhD student in 2010, supervisor Eric Molin, e.j.e.molin@tudelft.nl



TRISTAM: Traveller Response and Information Service Technology

- Programme leader: Prof. Harry Timmermans, h.j.p.timmermans@tue.nl
- Analysis and Modelling of Network Effects, PhD student Giselle de Moraes Ramos, g.moraesramos@tudelft.nl, supervisor Serge Hoogendoorn, s.p.hoogendoorn@tudelft.nl
- Analysis and Modelling of Accessibility Effects, PhD student Ruihua Zack Lu, r.lu@tudelft.nl, supervisor Caspar Chorus, c.g.chorus@tudelft.nl

- Analysis and Modelling of Spatial Externalities, PhD student Zarah Parvaneh, z.parvaneh@tue.nl, supervisor Harry Timmermans, h.j.p.timmermans@tue.nl
- Analysis and Modelling of Economic Effects, PhD student Sergejs Gubins, sgubins@feweb.vu.nl, supervisor Erik Verhoef, everhoef@feweb.vu.nl



The value of recreation

- Programme leader: Prof. Bert van Wee, g.p.vanwee@tudelft.nl
- The value of recreational areas in metropolitan regions, PhD student Tom Gosens, tgosens@feweb.vu.nl, supervisor Jan Rouwendal, jrouwendal@feweb.vu.nl
- Recreation and space: Dynamics of agenda formation and execution, PhD student Anna Grigolon, a.b.grigolon@tue.nl, supervisor Astrid Kemperman, a.d.a.m.kemperman@tue.nl
- Traveller response to unconventional trends, PhD student not yet known, supervisor Caspar Chorus, c.g.chorus@tudelft.nl
- The planning of recreation: Choosing locations and managing accessibility, post-doc researcher Dr Kees Maat, c.maate@tudelft.nl, supervisor Bert van Wee, g.p.vanwee@tudelft.nl



Towards a sustainable multimodal freight transport system for the Randstad

- Programme leader: Prof. Lóri Tavasszy, lori.tavasszy@tno.nl
- Modelling complex freight demand structures – trade and transport data, post-doc researcher Maureen Lankhuizen, mlankhuizen@feweb.vu.nl, supervisor Henri de Groot, hgroot@feweb.vu.nl

- Modelling complex freight demand structures - logistic chains, PhD student Igor Davydenko, i.y.davydenko@tudelft.nl, supervisor Lóri Tavasszy, lori.tavasszy@tno.nl
- System optimization of multimodal freight networks, PhD student Mo Zhang, mo.zhang@tudelft.nl, supervisor Bart Wiegman, b.wiegman@tudelft.nl
- A situated MAS for urban logistics in the Randstad, PhD student Niles Anand, n.anand@tudelft.nl, supervisor Bert van Wee, g.p.vanwee@tudelft.nl

Second Round



CESAR: Climate and Environmental change and Sustainable Accessibility of the Randstad

- Programme leader: Prof. Martin Dijst, m.dijst@geog.uu.nl
- Impact of climate change on mobility and residential choices, project leader Martin Dijst, m.dijst@geog.uu.nl
- Developing and evaluation of a modelling framework for urban weather and climate studies, project leader Bert Holtslag, bert.holtslag@wur.nl
- Improving integration of expert with tacit knowledge for strategic planning processes, Luca Bertolini, l.bertolini@uva.nl
- Urban Strategy climate proof, project leader Stan Geertman, s.geertman@geo.uu.nl



i-PriSM: Innovative Pricing for Sustainable Mobility

- Programme leader: Prof. Erik Verhoef, everhoef@feweb.vu.nl Post-doc researcher Jasper Knockaert, jknockaert@feweb.vu.nl
- Implementation of transport pricing: an economic perspective, project leader Erik Verhoef, everhoef@feweb.vu.nl

- Transport pricing: a multi-modal dynamic network perspective, project leader Michiel Bliemer, m.c.j.bliemer@tudelft.nl
- Acceptability of transport pricing: a psychological perspective, project leader Linda Steg, l.steg@ppsw.rug
- Implementation of road pricing: vehicle technology, governance, and institutional transition, project leader Bert van Wee, g.p.vanwee@tudelft.nl



SRMT: Strategy towards sustainable and reliable multi-modal transport in the Randstad

- Programme leader: Prof. Ingo Hansen, i.a.hansen@ct.tudelft.nl
- Spatial economic analysis of multimodal transport systems, project leader Piet Rietveld, prietveld@feweb.nl
- Integrated transition strategy towards SFRMT, project leader Luca Bertolini, l.bertolini@uva.nl
- Robust Multimodal Multi-objective, project leader Erik van Berkum, e.c.vanberkum@utwente.nl
- Dynamic assessment of multi-modal transport networks, project leader Rob van Nes, r.vannes@tudelft.nl
- Capacity management in SFRMT and reliable transport chains, project leader Rob Goverde, r.m.p.goverde@tudelft.nl

8 The management structure of the SAR programme

The SAR programme has a Supervisory Board, a Programme Committee and ad hoc Assessment Committees. The Programme Committee is responsible for the coordination and coherence of the programme, assesses the progress and draws up the budget. In addition, this committee is responsible for prioritising the research proposals on the basis of the outcomes of one or more Assessment Committees and promoting knowledge transfer to the users. The Supervisory Board allocates subsidy on the basis of the Programme Committee's advice and oversees the implementation of the research programme.

In 2009 the composition of the various bodies involved in the SAR programme was as follows.

Supervisory Board

W.J. Kuijken (through 1 February 2010),
Ministry of Transport, Public Works and Water Management (Chairman)
C.P. Buijink, Ministry of Economic Affairs
J.J. Engelen, NWO
H.J. Hazewinkel, VolkerWessels
J.M. Norder, Municipality of The Hague
J.W. Oosterwijk, Erasmus University Rotterdam
J. van der Vlist, Ministry of Housing, Spatial Planning and the Environment
Ms A.N. Wouters, Ministry of Agriculture, Nature and Food Quality

Programme Committee

H. Leeflang, Ministry of Transport, Public Works and Water Management
(Chairman)

Government representatives

A.J. van der Burg, Ministry of Housing, Spatial Planning and the Environment

N. van Paridon, Amsterdam Metropolitan Region

E. Reiding, Ministry of Transport, Public Works and Water Management

Ms O.A.W.T van de Riet, Netherlands Knowledge Institute for Transport Policy Analyses

E.C. Schmieman, Ministry of Economic Affairs

G.J. Schoemaker, Ministry of Agriculture, Nature Management and Food Quality

Scientific representatives

A.N. Bleijenberg, TNO

P.P.J. Driessen, Utrecht University

Mrs M.A.J. Kuijpers-Linde, Geodan Next

H.J. Meurs, Radboud University Nijmegen

H. Priemus, Delft University of Technology

E. van de Voorde, University of Antwerp

Secretariat

H.W. Waaijers, NWO Social Sciences

Ms. C.A. Rovekamp, NWO Social Sciences

Communication

Ms. Y. M. de Boer, YM de Boer Advies v. o. f.



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