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EVALUATION OF SAFER – VEHICLE AND TRAFFIC SAFETY CENTRE AT CHALMERS

a Centre of Excellence with financing from VINNOVA

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About VINNOVA

VINNOVA, Swedish Governmental Agency for Innovation Systems.

VINNOVA´s mission is to *promote sustainable growth*
by funding *needs-driven research*
and developing *effective innovation systems*.

Through its activities in this field, VINNOVA aims to make a significant contribution to Sweden´s development into a leading centre of economic growth.

Efficient and effective transport and good accessibility are preconditions for sustainable growth. The transport sector also employs a lot of people and in itself constitutes an important part of the economy. VINNOVA's operations in the transport field aim to develop the transport system and its infrastructure so that they promote sustainable growth and help to achieve the objectives of Sweden's transport policy.

SAFER - Collaborating for road safety that leads the world. Sweden is a world-leader in the field of vehicle and road safety. We are already very good at minimising personal injuries in connection with road accidents by applying various technical methods and systems. Researchers will now work to extend these Swedish successes.

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Research and Innovation for Sustainable Growth.

Evaluation of SAFER – Vehicle and Traffic Safety Centre at Chalmers

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by

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Preface

In this evaluation report The Swedish Governmental Agency for Innovation Systems (VINNOVA) present the first evaluations of the centre SAFER.

Traffic accidents are major social problem, estimated by WHO to become the world's third largest health problem by 2020. On a global basis, some 1 – 1,5 million people are killed in traffic accidents annually. In Sweden alone, the total socio-economic costs of traffic accidents each year are around SEK 30 billion SEK. There is of course a great demand for solutions and socio-economic benefits to be gained from increased traffic safety.

Traffic safety in Sweden is very good compared what it is in other countries and Sweden is one of the world´s leading countries within traffic safety. The prehistory of SAFER has its roots in decades of cooperation between Chalmers and the vehicle industry. The successful collaboration, evaluated in 2005 and 2007, has been a strong inspiration for confidence in the potential of a research centre for vehicle and traffic safety.

SAFERs aim is to develop a Competence Centre for excellence within the international field of vehicle and traffic safety. The ambition is to enable Sweden to reach world leading competitiveness, by providing countermeasures to considerably reduce both the number of traffic accidents and the number of fatalities and serious injuries using the multi-disciplinary scientific competence available among the partners.

To provide world leading competence forum for collaboration between the private and public sectors, universities and colleges, research institutes and other organizations that conduct research are vital for small and internationally dependent countries like Sweden. The need to focus its efforts on strong, internationally distinguished R&I milieus is a critical factor to promote sustainable growth. Internationally strong research and innovation milieus (R&I milieus) are one of the most important competitive factors in the face of global competition.

The evaluation of Phase 1 is focused on the measures taken to build an effective organization and the potential for long-term development. This is an opportunity for evaluation teams to give advice and recommendations on how each centre can be even more efficient and effective. It is also an opportunity for the scientific experts to get to learn about the centre at an early stage and discuss scientific issues that are critical for the future.

On behalf of VINNOVA we want to express our great appreciation to all the international evaluators. They accomplished their very hard work with great enthusiasm and professionalism. Their reports will be of great value for the further development of the centre SAFER.

VINNOVA in February 2009

Lena Gustafsson
Director General

Content

1 The Evaluation of SAFER

1.1 Introduction

On Monday morning, December 8, SAFER Director, Anna Nilsson-Ehle, with the Centre project leaders and staff, briefed the Scientific Experts of the VINNOVA evaluation team, Richard Bishop and Jean-Pierre Verriest, on the range of its projects and scientific progress. The meeting in the afternoon was attended by the Generalist Evaluators, Koshiro Ono and Per Stenius, the Centre Director and project leaders, the President and two of the Vice Presidents of Chalmers, the chairman of the Centre board and several other representatives of the industrial partners. The afternoon discussion covered organization and management, finance, interaction between industry and university, intellectual property, vision and strategy, student recruitment and educational activities. The evaluators also had a brief separate meeting with four of the graduate students at SAFER. We thank the all members of the Centre and the VINNOVA team for their efforts in setting up instructive and efficient presentations and facilities for the evaluation.

1.2 Research Vision, Strategy and Competence Profile

1.2.1 Sustainable Growth of the Economy through New Products, Processes and Services

SAFER is conducting pre-competitive research focused on active safety (pre-crash), passive safety (crash and post-crash) and Traffic Safety Analyses. The active safety research concentrates on enabling technologies (such as communications and sensor fusion) that can be applied to any sensing system geared towards crash avoidance, which would prove to be a very useful contribution to the industry as a whole. The passive safety area deals with human modeling, injury mechanisms and injury criteria and evaluation of protection devices. Much of the work in Traffic Safety Analyses is focused on developing new or improved methodologies for Field Operational Tests and Naturalistic Driving Studies that can be used across the industry to support the development of more sophisticated and effective safety products.

SAFER is maintaining its focus on a longer time horizon than the internal research groups of the industrial partners – “looking 15 years down the road,” as one Board member put it, which is appropriate for this type of research center.

The centre provides partners the opportunity to be at the forefront of knowledge in various technological domains (sensors, communication technology, human behavior, accident analysis, etc). This gives them the capability to anticipate the development of applications, thanks to the direct access to the research results through their participation in the projects. The advantage provided with respect to their competitors is highly appreciated by the partners.

1.2.2 Leading International Collaborative, University-Industry Research

SAFER has forged significant international partnerships, specifically with the State of Michigan in the U.S. and the University of Michigan, and also plays significant roles in EU projects. The U.S. partnership was implemented over a year in advance of an international collaboration agreement signed between the U.S. Department of Transportation and the European Commission – showing SAFER to be very pro-active in establishing trans-Atlantic partnerships. SAFER is also actively pursuing a Japanese research partnership. Cooperation has been established with well-renowned groups/individuals, such as J. Wismans and K. Arbogast in the field of biomechanics. International partnership is one of the key strengths of SAFER.

The connection of SAFER to industry seems to be quite strong. As an example of return-on-investment, the Board representative from Saab noted that they were able to quickly in the area of field operational testing, due to the existing capability developed at SAFER over the last two years. Others noted that SAFER serves as a good place from which to recruit new employees, as SAFER project. Also, the collaborative environment at SAFER contributes to the professional skills and perspective of employees from partner companies through working together on SAFER projects.

1.2.3 Centre Core Competency - People and Facilities

The development of scientific competence is different among the groups. Two groups are not yet really constituted. The presentation of staff in the written report is not sufficient for assessing which researchers are related to particular competences.

SAFER's dedicated facilities in a favorable technological environment, with places of work for both SAFER researchers and short-time visitors situated around meeting rooms are a major asset. This facilitates regular interaction between researchers and practitioners in road safety, whereas in their home academic department they might be isolated. So far, there technical equipment in-house at SAFER is limited, but plans have been made to address this concern.

1.3 Research Programme

In the report, the strategic framework of SAFER is briefly defined in terms of six focus areas. Research is conducted in four programmes, each hosting a mix of projects and led by a research coordinator. Nine competence areas support the programmes, though only six competence area leaders are listed. The nine competence areas and the four programmes, while explained in the report, do not easily fit together intuitively. While this arrangement appears to be intended to create a matrix of programme versus technical areas, in some cases the competence areas map into only one programme.

1.3.1 Pre-crash

Individuals working on the projects in this area are also engaged in active safety within their home organization, with good backgrounds and expertise on industrial applications since most projects have participants from vehicle OEMs or suppliers. SAFER facilities

are currently limited, but researchers have access to facilities of partner companies. SAFER plans include research to support the development of an active safety test bed as well as a driving simulator.

1.3.2 Passive Safety

SAFER has a long experience and is well known through the contribution of its partners (e.g. Chalmers, Volvo, Autoliv, Folksam…) in several areas of traffic safety like accident analysis, biomechanics, and performance evaluation of safety devices. The topics listed by the biomechanics and protection system teams are in line with the priorities commonly defined in international forums. While passive safety is quite a broad area, the only competence area which is fully staffed is biomechanics.

1.3.3 Post-Crash

The post-crash programme appears difficult to set up due to a lack of clearly stated societal needs and research questions, and the lack of industry partner participation. The description of Post Crash Safety on page 16 of the report is quite broad and mentions electric vehicles, while the E1 and E2 project descriptions in the appendix do not mention electric vehicles and instead deal more with Rescue Services. Overall, this area is not well defined and seems to lack direction. The range of issues with regard to rescue services is broad – pyrotechnics, gas tanks, batteries, etc. – and so the focus here is not clear.

1.3.4 Traffic Safety Analysis

Dr. Victor, a world leader in implementing Field Operational Tests and Naturalistic Driving Studies, as well as in devising effective methodologies for collecting and analyzing data, leads the area of Road User Behaviour and is heavily engaged in Traffic Safety Analyses. SAFER was the first in the world to evaluate active safety systems via naturalistic driving (the SeMiFOT project). SAFER has extended these techniques to the EU EuroFOT project, which is now underway. SAFER is well positioned to attract further significant EU projects within the next years as the European Commission funds major work in field operational testing. It is noted that, while Dr. Victor is not alone within SAFER in contributing to this area, he is quite dominant. This creates a potential risk in the event he decides to leave SAFER. Therefore attention should be given to broadening the capabilities and responsibilities for this area to include more people. The Centre Director noted that one of Dr. Victor's responsibilities is to appropriately do just that.

With regard to facilities, cooperation with Volvo and Saab provide researchers with vehicles equipped for naturalistic driving.

1.3.5 Science, Methodology and Technological Outcomes

Many small pre-studies were completed and resulted in full projects. Some pre-studies apparently did not result in follow-up studies (A4, A5, A6, and A9 – all of which ended

in 2007), for reasons not described in the report. The reasons themselves would be interesting, but also the process for making these decisions should be made clear.

The report does not provide information about structure and milestones of the long term projects. For the longer-term projects AD3, A7, A8, A10, the report states the general topic but does not elaborate on the particular research questions pursued. At least as described, the projects do not appear to be clearly targeted. The brief project descriptions made it difficult to assess research outcomes.

We also note the imbalances of project description in the report. For instance, the same amount of space is given to describing 2 month projects and 5 year projects.

1.4 Scientific Leadership - Project Generation, Development and Selection

The very broad set of activities on the area of pre-crash is in-line with industry and research priorities worldwide. Such a broad set of activities should be scrutinized– is SAFER just "doing what everyone else is doing" or is SAFER actually making unique contributions? This was questioned specifically with respect to vehicle communications. The reply was that unique aspects are being pursued with respect to low latency communications, which is an appropriate focus. It was also clarified that the Active Safety Test Area centers on development of requirements and methodologies, appropriately leaving the engineering aspects to the broader set of actors involved in developing this Test Area.

Regarding Traffic Safety Analyses, SAFER's activities and the stature of their researchers easily puts it in the top echelon worldwide. SAFER plays an essential role in current EU projects and is leading in the development of new techniques and methodologies, particularly in the area of naturalistic driving studies.

On the other hand, the information in the report indicates that some gaps seem to exist in this area. The topic of research into the behavior of driver sub-groups (aging drivers, teen drivers, truck drivers, etc.) could be a natural outcome of ongoing naturalistic driving work, but is not addressed. Similarly, work on "adaptive HMI" would be a natural fit given the competencies within the Center, but this is not addressed as well.

The SAFER Board was asked if safety was a "hard boundary" for research projects, or whether they see the convergence of intelligent vehicle technology across safety, mobility, and environment as a legitimate area to pursue. The Board enthusiastically embraced this area for future work. This is an important area and SAFER should work to come-up with a clearly defined strategy for entering this domain, beyond the current single project on safety for hybrid vehicles.

Several general comments can be made on project generation, development, and selection:

- The report gives is no overall description of the background (scientific, societal) for selecting the six focus areas, as the main questions involved, and no general

roadmap for the four research programmes (pre-crash, crash, post-crash, …). SAFER should have formulated more clearly the process of selecting projects in the context of a general SAFER strategy.

- The contents of the competence areas are described in some detail. However, the evaluators missed descriptions of individual projects (goals, time schedule, amount of personnel involved, and the results for achieving the goal of each project). For the whole scale of projects in SAFER, these are very important parameters for evaluating steps to be taken in the future.
- In this context, SAFER should clarify and emphasize synergies between the research topics in the various programmes, i.e. the ways in which research results from each programme may contribute to research questions in other programmes. How can Pre-crash contribute to and benefit from Crash? How can Traffic Safety Analyses contribute to and benefit from Crash and Pre-Crash? Etc.
- It is recommended that structures be put in place to encourage synergy across reference groups, since a key rationale for creating SAFER was to facilitate such synergy. This could be in the form of incentives to researchers, targeted calls for proposals, or appointing an "advocate" who would participate in the project generation process to look for opportunities for synergy.
- Pre-studies are a good method for exploring potential projects. They also give the opportunity to prepare applications to national or EC calls which in turn provide opportunities to develop better and more ambitious projects.
- Ideas of new projects may originate from diverse sources. They are presented by the coordinators to the management group. If the idea is accepted, the management group suggests allocation of resources for the development of the project or pre-project proposals, which, depending on size, are submitted for approval by the manager or the board. This overall bottom-up approach is a systematic way of picking up new ideas and makes it possible to allocate resources even to high-risk proposals in a controlled way. However, it might also lead to a scattered research programme if projects are not assessed in the context of a well-defined strategy and roadmap of the Centre as a whole and of the focus areas or programmes
- A top-down process is only present through the sixfocus areas but the rationale for these – versus other areas not selected-- is not explained.

1.5 Overall View - Productivity, Critical Size and Value-added of the Centre

See above as to the perceived return-on-investment to the Partners.

Productivity in terms of publications seems rather low for the time being, even though some associated projects were included into the center portfolio from the beginning. SAFER is recommended to create continually updated lists of reports, participation in conferences and scientific publications.

Overall, the center staff is quite numerous (135) but the distribution of the personnel across the project, the programmes, and competence groups was not given in the report. This makes it difficult to evaluate if the critical mass is reached for a particular topic.

The added value of the centre as seen by the industry:

- neutral forum where industrial partners can discuss and share research questions,
- knowledge provision for starting new research area for those who don't have the expertise,
- provision of skilled persons (PhD students) to recruit in research teams.

As seen by PhD students:

- access to a research community where they can share common questions,(facilitate communication, share information, acquire hands-on training and technical expertise)
- access to industry contacts they would not meet otherwise.

As seen by the University:

- opportunity to access costly technical facilities,
- employment perspectives for the students which enhancesthe image of the university,
- promotion of interdisciplinary research and a culture of conducting basic research in close cooperation with industry.

1.6 Centre Partners

1.6.1 Partners' Needs Identification and Articulation

The partners appear satisfied with the way the centre takes on board their needs via the Reference Group process. In fact, some projects were directly initiated by industrial partners (e.g. Use of human models for system development, Rear seats for small humans…), with the Centre bringing a broader perspective to projects by integrating the common needs of several partners. SAFER seems to be developing well towards its role as a bridge between the more fundamental research at Chalmers and the orientation towards application required by the participating industries and institutes.

1.6.2 Partner Participation in Innovation and Technology Translation

The leadership of the projects shows a good involvement by the key industrial partners, but the report does not indicate how project staff maps to the partners.

1.6.3 Partner Complement

For pre-crash, one key emerging player is not present within the partner list, namely suppliers of automotive radio systems for safety-critical wireless communications.

1.7 Organization and Management of the Centre

1.7.1 The Board's Role

The strong commitment of the Board to the mission, vision and goals of the Center and to defining and developing the contents of the Centre research was well evidenced at the evaluation. They stressed that it will take time to achieve the goals. Extensive discussions during the first two years of Centre existence have resulted in a well-financed research programme that is still only in its early stages of implementation. The Board in a very commendable way is aware of the need to create a “SAFER culture” that permeates everyone in the large group of senior and junior scientists, who in many cases are or may feel themselves primarily associated with University departments or industries. Solutions to this problem need to be developed.

Several of the Board representatives have leading positions within the larger partner organizations, thus adding credibility to SAFER and strengthening its ability to sustain funding. Board members understand the technical topics and challenges. They consider that sharing of SAFER values, together with the culture of the partners is a sufficient condition to produce and cultivate a good level of cooperation. However, they understood the issues and management challenges brought forward by the evaluators due to the unusual nature of the Centre as “not-a-legal-entity”. They were straight forward in noting that there are no simple answers to these challenges.

Personnel engaged directly in research work are not represented on the board. The development of SAFER culture and identity would benefit from appointing representatives with such background.

1.7.2 Management Team Structure, Processes and Performance

The Centre is lead by an enthusiastic and knowledgeable manager with a clear vision of the Centre goals. She clearly appreciates the managerial problems associated with bringing together a large group of researchers and projects into a Centre with a well defined identity. Centre research is planned and supervised by a management group consisting of the four research area coordinators, a senior professor from Chalmers and the manager, extended by the six competence area leaders from Chalmers and research institutes.

The management team seems to be too small to address all possible managerial questions. For example, the Director, who seemed a little isolated to perform her management task, already has a significant job handling the core activities of the Center – peripheral activities are less likely to get the proper attention. In terms of processes, the actions of the intermediate managers in coming up with new ideas and initiatives were not apparent from the written report or the hearing.

As SAFER research activities develop further, it will become an increasingly complex task to follow and evaluate the progress of each project. This development as well as the need to create a common culture and a sense of identity, highlights the fact that

development of the role of the manager and the management structure will be necessary. The manager and Board were aware of this but had not considered solutions in any detail.

1.7.3 International Scientific Advisory Board

Appointment of an International Scientific Advisory board has been deferred until the structure of the research programme is fully developed. This decision is somewhat surprising, because an international board offers possibilities for obtaining not only comments on ongoing projects, but also in benchmarking research proposals and strategies in an international perspective, which is essential if the Centre is to reach an internationally leading level. The board members could also give invaluable independent advice to graduate students. SAFER is therefore recommended to appoint an International Scientific Advisory Board as soon as possible.

1.7.4 Relationship to the University and University Units

At the evaluation, the Chalmers Presidents voiced the strong support received by SAFER from Chalmers. For Chalmers, competence centers are important as promoters of interdisciplinary research and a culture of conducting basic research in close cooperation with the industry – both essential ingredients of the culture at a University of Technology. SAFER is also an important competence center in view of the long-standing traditions of excellence in research related to the transport safety at Chalmers.

Competence Centers have become an important component at Chalmers and appropriate contacts and cooperation between them should be established. SAFER management is aware of this and some contacts have been established, but these could be extended.

The majority of researchers working within SAFER are affiliated with different departments at Chalmers. An important and difficult task during the first two years at SAFER has been the transfer of researchers from their environment at Chalmers to SAFER. SAFER offers a physical environment that is eminently well adapted to SAFER needs, with its own excellent facilities.

While “SAFER” is quite visible at the Lindholmen campus as a name, SAFER could work to be more clearly identified with papers, projects, and individual researchers. The SAFER affiliation does not appear clearly on the front page of the publications that the committee had the opportunity to look at. Currently, the researchers choose to reference SAFER through the acknowledgements.

It is the opinion of the evaluators that more needs to be done to promote the external visibility of SAFER, as a Centre in its own, separate from different departments at Chalmers.

1.7.5 Communication Strategy and Execution

A communication strategy was not presented. Communication of research results takes place through the usual channels: articles in scientific journals, conferences, seminars, reference groups, direct contacts with industries etc.

It is realized that the staff resources are probably not sufficient to take care of a more developed communication strategy at present, but for the creation of a true SAFER identity, addressing this concern is essential.

1.7.6 IP issues

In many SAFER projects, several partners are involved. The results of these projects in many cases will involve several kinds of IP issues, for instance, specific patents. During the evaluation, the Board members briefly outlined current progress in addressing IP issues, but direct documentation of this was not presented. Appropriate handling of IP issues will be necessary for future decisions on fundamental and applied research projects in order to facilitate international collaboration. SAFER is recommended to deal with a policy for handling IP issues as soon as possible.

1.7.7 Financial Report for Stage 1

In the Financial Report, individual projects are described by mentioning the project title project leader, total budget and total duration without any description of project contents and goals, time schedules, amount of personnel involved and results. For assessing the general financial situation of the Centre this may be sufficient, however, a full evaluation of the situation was not possible without the more detailed description of the individual projects discussed above.

The fact that it has been possible to obtain project grants amounting to well above 100 MSEK from various funds, including several EU projects is a remarkable achievement and a clear indication that SAFER research is felt to be of high level of significance and interest.

The overall resources available to the Centre during year 1within the Centre agreement was 19.2 MSEK, of which 9.2 in cash and 9.9 in kind. For year 2, the total amount was 18.7 MSEK of which 11.0 in cash and 7.7 in kind. During year 1, there was only one cash contribution (1 MSEK) from the industry; none during year 2. The forecasts for years 3 and 4 do not indicate any substantial change in this distribution. The cash contribution during years 1 and 2 has been spent by the end of 2008. As noted above, the large project portfolio (including “related projects”) can be expected to lead to a need for a re-evaluation/extension of management, which is likely to result in increased financial costs. It is evident that SAFER needs to put strong efforts in the near future in obtaining cash contributions from stakeholders other than VINNOVA and Chalmers.

1.8 Training Personnel of High Competence

1.8.1 Recruiting and Developing People of International Competence and Experience

An acceptable number of international researchers have been attracted to SAFER, both as guest researchers and as staff.

Traffic safety per se is not an academic topic and the Centre is the right place to train people on this topic. However, PhD students feel that there are not enough training opportunities on transversal topics for them – some means are needed to gain a fundamental understanding of fields outside their own, or to equalize their level of depth relative to their peers.

Training is also achieved through the opportunities offered by open seminars with world renowned speakers.

1.8.2 Mobility of Personnel between University and Industry

The graduate students present at the evaluation noted that a particular advantage of belonging to SAFER was the close contact with industries that have immediate interest in their research. There are several industrial PhD students. It was not clear whether there were direct exchange of researchers between SAFER and industries, such as short-term work periods by SAFER personnel at industries. On the other hand, there have been many visits by industry representatives at SAFER, and the SAFER facilities are well adapted to receive people from industry that wish to work for shorter periods within SAFER. Mobility between University and industry should increase as SAFER projects develop further.

Board members noted that SAFER can act as a place to cultivate new skills and perspectives for mid-level employees, thereby enhancing their career. Many people present at SAFER occupy positions in the industry and the university at the same time. This means that teaching includes industry's views of the problems to be solved and that industry benefits from the most advanced knowledge available at the university. However, to what extent transfer of knowledge into university courses has actually taken place was not clarified during the evaluation.

1.8.3 Gender Perspective

Gender is not a critical issue at SAFER. SAFER is led by a female manager, and about one third of the people at SAFER are females. Two PhD students out of the four that the committee met were female.

1.8.4 Contributions to University Education

The topics addressed by the centre find their place in the master of automotive technology

According to Table 10 in the report, 39 graduate students, (12 industrial PhD students, 3 denoted as “senior”) are associated with SAFER. Of these, 20 work more than 50% of their time in SAFER projects (most of them actually started before the creation of SAFER). Those interviewed were satisfied with the supervision received as well as the contacts with fellow PhD students within the research schools at Chalmers. Thus, the contribution of PhD students to SAFER is very significant, and the organization that makes this activity possible, functions well.

The affiliation of researchers at SAFER with departments at Chalmers implies that they will be able to benefit from direct experience gained through contacts with and research in collaboration with industries that are shareholders in SAFER.

1.9 Recommendations for VINNOVA

For future evaluations, and also for VINNOVA to be able to better follow the progress of SAFER and the development of different national and international collaborations, it would be useful if a clearer strategy and a roadmap of SAFER activities were presented in future reports and between evaluations.

1.10 Recommendations to the Centre

The comments and recommendations given above can be summarized as follows:

- SAFER is recommended to further develop the management structure in light of the current heavy responsibilities of the managing director.
- SAFER should endeavor to create a stronger feeling of common culture as well as a more visible identity.
- SAFER needs to put strong efforts in the near future into obtaining cash contributions from stakeholders other than VINNOVA and Chalmers.
- SAFER is recommended to deal with rules with regard to handling IP issues as soon as possible.
- SAFER should develop a structured process for exploiting the synergies between the reference groups and maintain a diagram or roadmap, which clearly shows these interactions.
- SAFER should create roadmaps for all four programmes –key questions to be to answered at each stage, ways of selecting projects in relation to the roadmaps. The Post-Crash area should be re-examined for viability, since it is not currently well-defined and has little industry support.
- SAFER should formulate its strategy for entering the domain in which intelligent vehicle technology is converging across safety, mobility, and environment more clearly.
- SAFER is recommended to appoint an International Scientific Advisory Board as soon as possible.

APPENDIX A:
Guidelines for the Evaluation of SAFER

1. Background

1.1. The Centre background

This document constitutes the guidelines for the evaluation of the competence centre SAFER

SAFERs aim is to create and develop a Competence Centre in the area of vehicle and traffic safety. The centre should form a vigorous and innovative academic research environment in which industrial and public partners participate actively. The centre is also a link in the governmental effort to develop university-industry interaction in order to derive long-term benefits for the society and to promote sustainable growth in Sweden.

The centre should create new internationally competitive concentrations of highly qualified experts, conducting problem-oriented and, as a rule, multidisciplinary research and ensuring that the knowledge and technology generated will lead to new products, processes and services. Ideas outside the core activities of the participating actors can also be utilised and further developed, e.g. by the set-up and development of new high-tech and research-based companies.

SAFER shows a yearly turnover of approximately 30 MSEK with a governmental cash contribution of 10 MSEK. The remaining contribution is equally shared by the University (50%) and the industrial and/or public partners (50%).

1.2. Evaluation background

SAFER is intended to run for up to 10 years. A substantial part of the first three years is expected to be devoted to build-up and development of the Centre. The parties of the Centre are universities and research institutes, industrial companies and public services. The parties contribute jointly to the Centre’s research programme, financially or in the form of active work. Their collaboration and the financing are defined in a Main Contract for the Centre.

The start up and beginning phase for SAFER is Stage 1, which comprises the initial three years. VINNOVA covers up to SEK27.5 million of the expenses during the stage, provided that the industrial and public partners contribute with at least the same amount. After the first stage the VINNOVA annual contribution to a Centre is expected to be about SEK10 million per year

The main purpose of the evaluation is to give an input to the negotiations, decisions about stage 2, the development of the Centres, and/or other specific actions. The

evaluation therefore has to be completed in good time (preferably 3 months) before the expiration of stage 1.

2. The evaluation team

SAFER will be evaluated by a team of international experts. Two of the experts in the team will have the competence and the task to evaluate the Centre from a scientific point of view. Two persons in the team will have experience from similar programmes for university – industry research collaboration. These “generalist” experts will look at the functioning, organization and development of the Centre from a general point of view. The Centre has suggested 5 suitable scientific experts. From that list VINNOVA, has decided on whom to invite.

3. The task of the evaluators

This first evaluation of SAFER will be carried out after 2 ½ years. Its primary purpose is to evaluate the new established organisation of the Centre and the initial activities to establish the research programme in a Centre format. Thus, the evaluation will review progress of scientific and industrial efforts, recognising that it is early to expect conclusive results. The evaluators will form an opinion concerning the approach and measures taken so far in order to assess the potential for long-term development towards a successful Competence Centre. Evaluators may offer suggestions for actions to enhance the prospects for Centre success.

As a basis for the evaluations of SAFER VINNOVA has formulated a number of success criteria (see Appendix 2). Centres are asked to prepare reports according to the guidelines in Appendix 3.

The evaluation will be based on the success criteria.

The scientific experts on the evaluation team will review the Centre report sections:

1 Research Area, Competence Profile and Critical Size
2 Centre Partners (from the point of view of research contribution)
3 Research Programme

They will offer their perspective on the research in the context of the Vision, Mission and Strategy and financial aspects with respect to support of research agenda.

The "generalist" experts on the evaluation team will review the Centre report sections:

1 Financial Report for Stage
2 Organisation and Management of the Centre.
3 Personnel of High Competence
4 Centre Partners (from the point of view of organisational efficiency and adaptation to the goal of the Centre)

They will also comment on priorities of actions to be taken by VINNOVA both in terms of financial support and of more structural matters, the organisation of the Centre report and the site visit

The evaluation team will submit a written report to VINNOVA. The report will roughly follow the structure of the review outlined above, and include conclusions and recommendations to the Centre and VINNOVA. The evaluation team shall be unanimous in its conclusions and recommendations.

4. Organisation of the evaluation

The composition of the evaluation team is decided by VINNOVA. The evaluation team itself decides on the distribution of work among its members.

The basic documentation, essentially the Centre report to the evaluation team/VINNOVA, will be distributed by VINNOVA to all members of the evaluation team not later than four weeks before the evaluation. Each evaluation starts with an introductory meeting of the evaluation team in the evening the day before the interviews and ends when the evaluation report is completed. The first draft of the evaluation report should be finished in the evening of the day the interview is performed.

The evaluation of SAFER will be carried out December 8-th 2008

The final evaluation report is available not later than January 12, 2009.

During the site visit the evaluation team should be given the opportunity to meet:

- the Centre Director
- the Chairman of the Centre Board of Directors and
- representatives from the industrial and/or public partners
- university staff incl. representatives from the Vice-Chancellor´s office
- research leaders and/or programme directors active within the Centre
- doctoral students.

VINNOVA staff will be present at the site visits. The staff will act as administrators and will not take active part in the evaluation, but can add information during work sessions.

The evaluation will be divided into two sessions, one where the scientific experts meet parties from the Centres and one where the “generalist” experts together with the scientific experts meet parties from the Centres. During lunch, i.e. between these two sessions, the evaluation team will also meet with some (maximum 10) PhD students in the Centre.

5. Centre arrangements in connection to the evaluation

SAFER is asked to propose five scientific experts for the evaluation and send the suggestions to VINNOVA not later than October 1st, 2008. It is important that the Centre can guarantee no conflict of interest with the proposed evaluators.

The basic documentation, in principle the Centre report to the evaluation team will be distributed by VINNOVA to the members of the evaluation team 3- 4 weeks prior to the evaluation. The template that should be used is presented in Appendix 4.

Furthermore the Centres should:

- book location for the interview sessions
- invite Centre representatives to the interview sessions
- inform VINNOVA on the address to the location
- arrange lunch for the evaluation team and the administrative staff (chamber separée)
- arrange so that the evaluation team can meet with PhD students during lunch coffee, preferably in the lunch location.

Finally the Centre leader should review, with respect to facts only, the first draft of the evaluation report and report any correction to factual information in the draft to VINNOVA. This first draft should be kept confidential.

6. Remuneration to the evaluators

VINNOVA will pay for all costs for evaluation team members including travels, accommodations etc, as well as a remuneration.

Appendix 1, Time Schedule

Nov 10, 2008 at 12:00 a.m.: The Safer Status Report is available at VINNOVA. The report is sent to **Thomas.Eriksson@VINNOVA.se**.

Nov 14, 2008: The Safer Status Report is distributed to the evaluators by VINNOVA.

Dec 7, 2008 at 8:00 pm: Introductory meeting for the Safer evaluation team

Dec 8, 2008:

09:00- 11:00 Safer Scientific Expert Evaluation Session
11:00- 12:15 Lunch meeting between Scientific and Generalist Evaluators
12:15- 12:45 Meeting with up to 10 PhD students
12:45- 13:00 Preparation for the next session
13:00- 15:00 Generalist Expert Evaluation Session
15:00- 24:00 Work session for the evaluation team

Dec 15, 2008: Evaluation team report is sent to the Safer centre for control of facts

Dec 19, 2008: Comments on facts are sent from the Safer centre to VINNOVA

Jan 12, 2009: Final report is sent to the Safer centre from VINNOVA

Appendix 2, Criteria for SAFER

Vision

To enable Sweden to reach world leading competitiveness, by:

- Providing countermeasures to considerably reduce both the number of traffic accidents and the number of fatalities and serious injuries
- Using the multi-disciplinary scientific competence available within SAFER
- Making SAFER a hub for excellence within the international field of vehicle safety

The Vehicle Safety Centre 2015

- 150-200 Researchers (Senior staff, PhD-students)
- Close collaboration with industrial partners at Norra Älvstranden
- Graduate School and Academic transfer (guest researchers, Conferences)

International standing

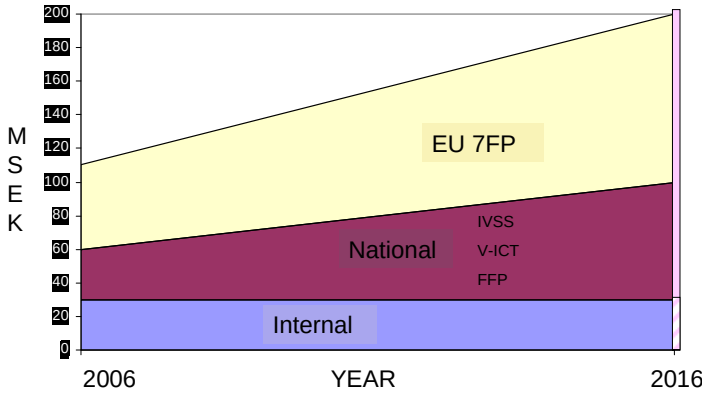
- Establishment of international contacts and collaboration (EU-projects, coordination of international projects)
- Scientific Advisory committee and its activity
- Arrangement of international conferences
- Participation in international conferences, publication activity

Economy

Research will be financed both within the Centre (over a longer period of time by 1/3 VINNOVA, 1/3 industry, 1/3 university), and by external funding through national and international research programmes.

The internal budget is foreseen to contain cash contributions from VINNOVA and mainly in kind contributions from industry and universities.

A tentative budget (MSEK/yr, research & education) is indicated in the figure below.



Appendix 3, Instructions for Centre Reports to the Evaluation Team

The reports will be forwarded to the evaluation team by VINNOVA. Guidelines for report contents and length are given below. The numbers of pages are indicative but *should not be exceeded.* Facts about the Centre are to be compiled in section 10. It is recommended that these data be referred to in the text in other relevant sections so as to give context and appropriate emphasis to the data.

The requested financial statements are a way to monitor the set up of the centre. Of especial interest is to know the sources of financing of the centre, balance between in-kind and cash contribution from each participant, kind of expenses that characterise the centre (salaries, infrastructure, etc), personnel that receives their salaries from the centre (often a critical issue in IPR discussions), background of the personnel in the centre (does the centre attract people world- wide or locally), typical size of projects within the centre (what is a large and small project, how are projects economically built up), how aggressive is the centre to receive other funding, how does the centre take advantage of being a centre when applying for funds, etc. This monitoring is made out of the financial statements. In addition this gives an indication of the economical awareness of the centre.

0. Summary (1 page)

- Progress and prospects of the Centre, highlights, breakthroughs, etc.

1. Long-term Vision, Mission and Strategy (1 page)

- Provide a ten-year perspective on the Vision, Mission and Strategy of the Centre in the context of the Success Criteria's, see Appendix 3.

2. Organisation and Management of the Centre (3 pages)

- Describe the role and activities of the:
  - Board of Directors.
  - Centre Director.
  - Management Team
  - International Scientific Advisory Board.
- Comment on the scientific leadership of the Centre.
- Describe the process of:
  - idea generation.
  - idea development.
  - project selection.
  - project planning.
  - project review.
- What steps are taken to stimulate and promote innovation processes from ideas/results to products and services?
- Describe the status and role of the Centre vis-à-vis the:

  - university organisational units.
  - central administration.
  - the Faculty.
  - Other Centres.
- What steps are taken to communicate to Centre participants and partners?
- Describe measures taken to stimulate mutual personal mobility between the industrial/public services partners and academic milieus.
- Describe measures taken to provide equality of opportunity, particularly but not only, from a gender perspective.
- Comment on things that work well and things that don't.

3. Research Area, Competence Profile and Critical Size (3 pages)

- Briefly describe the core competency of the Centre's research team both in terms of research competency, (specify particular strengths in research) and personnel.
- Describe the facilities that the Centre has developed or plans to develop to support the programme.
- Describe the personnel and facilities available to the Centre (through collaboration within or beyond the university) that contribute to establishing the identity and competence profile for the research of the Centre.
- State the position of the Centre in relation to internationally leading groups.
- Describe collaboration with external groups (national and international), in particular new collaborations instigated since establishing the Centre.
- Describe the value added being a Centre compared to other ways of research collaboration.
- Comment on the Centre with respect to "critical size".

4. Centre Partners - Companies and public service partners (3 pages)

- For each of the partners describe:
  - their corporate profile (number of employees, main products, location of operations etc.).
  - how their business interests are aligned with the Centre research efforts
  - how they interact with the Centre (including planning, personnel and facilities).
- Concerning the overall strategy and considering the Centre as a whole:
  - describe the way in which key issues and strategies are identified by partners to stimulate needs-driven research.
  - describe the mechanisms for innovation and translation of technology into new products, processes, and services.
  - what measures have been taken to achieve strong links and integration between academia and companies/public services, and among companies/public services.

5. Research Programme (5 pages)

- Provide an overview of the research programme.

- Provide brief descriptions of the research projects (50-75 words each). In addition to basic science and methodology, describe the need the research addresses, the question to be answered and the technological objectives.
- Provide a summary statement concerning research productivity. (Particulars of research output are to be listed in the Appendices under Publications and Presentations Activity and International Activity.).

6. Financial Report for Stage 1 (2 pages)

- Discuss any concerns regarding financing matters.
- Describe existing sources of non-Centre funds supporting related research.

7. Personnel of High Competence (1 page)

- Describe the contribution of the Centre to university education (graduate and undergraduate): e.g. courses taught, seminars given, students supervised other than those already listed under research projects, etc.
- What measures have been taken to recruit, develop and keep people with leading international competence?
- What is the percentage of students associated with the Centre who's first degree is from:
  - another University?
  - outside Sweden?
- What measures have been taken to provide opportunities for students to travel or study abroad?

8. Plans for Development (1 page)

- Describe the plan for development of the Centre over the next three years (stage 2) in relation to the long-term objectives.

9. Further information (1 page)

- Please provide information of particular interest to the evaluation team that has not been covered in any other section of the guidelines.

10. Facts about the Centre

a *CV* in summary of the Centre Director

b *Centre Partners*
TABLE 1: List Centre Partners (Companies/public sector units), the name and position of the key contact)

c *Board of Directors*
TABLE 2: List the name, position, company, location of the members of the Board of Directors

d *Management Team*
TABLE 3: List the name, position in the University, role on the team for the persons in the Management Team

e *International Scientific Advisory Board*
TABLE 4: List the name, position, university/company, location for the members of the International Scientific Advisory Board

f *Research Programme*
TABLE 5: Research Projects and Staff (for each project: project title, project leader, staff and student names, and person-years by year (include company and public sector personnel also)).

g *Publication and Presentation Activity*
TABLE 6: List publications, patents, theses, posters, presentations, invited lectures, etc. Include work funded by VINNOVA. Also include other closely related work funded by other means, indicating that other funding was used by an asterisk*.

h *International Activity*
TABLE 7: List collaborations with international researchers, visits outside Sweden (conferences, seminars, university visits, etc.), and foreign visitors to the Centre. Include work funded by VINNOVA and VR. Also include other closely related work funded by other means, indicating that other funding was used by an asterisk*.

i *Financial Reports* (please use the templates in Appendix 5 or in the attached Excel file “Financial Report for Stage 1”)
TABLE 8: Overall resources available
TABLE 9: Overall expenditures
TABLE 10: Research personnel
TABLE 11: Project expenditures
TABLE 12: Related research grants

j *Websites*
Provide relevant websites for the Centre, the University, research partners, research collaborators, etc.

Appendix 4, Templates for the Financial Statements

SAFER	
Dnr:	
Year 1:	2006-04-01 - - 2007-03-31
Year 2:	2007-04-01 - - 2008-03-31
Year 3	2008-04-01 - - 2009-03-31

Fyll i denna rota endast på denna sida, övriga fylls i automatiskt

Table T8: Overall resources available (cash and in kind)

This table should present the overall resources available (cash as well as in-kind) for center activities, one row for each financial source.

Affiliation	Year 1						Year 2						Year 3						Summary Stage 1					
	Budget (kSEK)			Outcome (kSEK)			Budget (kSEK)			Outcome (kSEK)			Budget (kSEK)			Forecast (kSEK)			Budget (kSEK)			Forecast (kSEK)		
	Cash	In kind	Total	Cash	In kind	Total	Cash	In kind	Total	Cash	In kind	Total	Cash	In kind	Total	Cash	In kind	Total	Cash	In kind	Total	Cash	In kind	Total
VINNOVA																								
University																								
CHALMERS																								
Industrial & Public Partners																								
VCC																								
VOLVO																								
SAAB																								
SCANIA																								
AUTOLIV																								
VTI																								
SP																								
SICOMP																								
LINDHOLMEN SCIENCE PARK																								
FOLKSAM																								
IMEGO																								
EPSILON																								
GÖTEBORGS UNIVERITET																								
TELIA SONERA																								
SAAB MICROWAVE SYSTEMS																								
FORDONSKOMPONENTGRUPPEN																								
VÄSTRA GÖTALANDSREGIONEN																								
VÄGVERKET																								
Sum																								

SAFER	
Dnr:	
Year 1:	2006-04-01 - - 2007-03-31
Year 2:	2007-04-01 - - 2008-03-31
	2008-04-01 - - 2009-03-31

Table 10: Research Personnel

List all personnel working in the centre. Preferably group them in order to use the information in other parts of the report

Year 1 = current list of key holders

				Year 1							
				Budget				Outcome			
Name	Affiliation (financing source)	University degrees	Category title, status / position	Degree of activity in the center		Cash contr.	In kind contr.	Degree of activity in the centre	SAFER Cash contr.	SAFER In kind contr.	OTHER
	Center / Univ / Partner	(year of degree, university)	Prof / Res / Senior/ PhD Stud/ Investigator /Student	% of full time		kSEK	kSEK	% of full time			

SAFER	
Dnr:	
Year 1:	2006-04-01 - - 2007-03-31
Year 2:	2007-04-01 - - 2008-03-31
	2008-04-01 - - 2009-03-31

Table 11: Project expenditures

Follow up that resources have been used for learning activities and communication (5% of VINNOVA funding), list of projects and financial size

	Year 1						Year 2						Year 3						Summary Stage 1					
	Budget (kSEK)			Outcome (kSEK)			Budget (kSEK)			Outcome (kSEK)			Budget (kSEK)			Outcome (kSEK)			Budget (kSEK)			Outcome (kSEK)		
	Cash	In kind	Total	Cash	In kind	Total	Cash	In kind	Total	Cash	In kind	Total	Cash	In kind	Total	Cash	In kind	Total	Cash	In kind	Total	Cash	In kind	Total
Management of center																								
Communication																								
Learning activities																								
Projects (subprojects included)																								
Sum																								

SAFER	
Dnr:	
Year 1:	2006-04-01 - - 2007-03-31
Year 2:	2007-04-01 - - 2008-03-31
Year 3:	2008-04-01 - - 2009-03-31

Table 12: Related Research Grants

List grants granted, applied for and under preparation - project title, total amount applied for, duration of project, funding source, date of applicatin and any comment you might have

Project Title	Status	Total amount applied for	Duration of project	Funding source	Date of application	Comments
	Granted / Applied / Under preparation/ Rejected	kSEK				

APPENDIX B:
The Evaluation Team

Generalist Evaluators

Prof emeritus **Per Stenius** (chairman of the evaluation team)
PS Interfaces
Sweden

Professor **Koshiro Ono**
Japan Automobile Research Institute (JARI)
Japan

Scientific Evaluators

Professor **Jean Pierre Verriest**
Institut National de Recherche sur les Transports et leur Sécurité
France

Richard Bishop
Bishop Consulting
USA

APPENDIX C:
Participants at the interviews

Participants in the morning interview session of the SAFER evaluation.

Centre Representatives

Anna Nilsson-Ehle	Director	SAFER
Helen Gellerman	Project Manager FOT/NDS	SAFER
Jan Jacobsson	Head of section	SP
Hans- Erik Pettersson	Road User Behaviour	VTI
Lotta Jakobsson	Ref group crash	Volvo Cars
Mathias Lidberg	Research assistant	Chalmers
Erik Ström	Prof Sensor & Communication	Chalmers
Mats Svensson	Competence area Biomechanics	Chalmers

Evaluators

Jean- Pierre Verriest	Scientific Expert	INRETS, France
Richard Bishop	Scientific Expert	Bishop Consulting, USA
Koshiro Ono	Scientific Expert	JARI, Japan

VINNOVA representatives

Joakim Tiséus	Programme Manager	VINNOVA
Thomas Eriksson	Programme Manager	VINNOVA

Participants in the afternoon interview session of the SAFERevaluation.

Centre Representatives

Jan-Eric Sundgren	SVP	Volvo Group
Jan Olsson	VP Research	Autoliv
Per Lenhoff	Head of Safety Saab	Saab
Anna Nilsson- Ehle	Director	SAFER
Yngve Håland	Senior Advisor Research	Autoliv/SAFER
Ove Pettersson		VINNOVA/Chalmers

University representatives

Karin Markides	President	Chalmers
Johan Carlsten	Vice President	Chalmers
Anna Dubois	Vice President	Chalmers

Evaluators

Per Stenius	Generalist Evaluator	PS Interface, Sweden
Koshiro Ono	Generalist Evaluator	JARI, Japan
Jean-Pierre Verriest	Scientific Evaluator	INRETS, France
Richard Bishop	ScientificEvaluator	Bishop Consulting, USA

VINNOVA representatives

Joakim Tiséus	Programme Manager	VINNOVA
Thomas Eriksson	Programme Manager	VINNOVA

VINNOVA´s publications

February 2009

See www.VINNOVA.se for more information

VINNOVA Analysis VA 2009:

01 Svenska tekniker 1620 - 1920

VA 2008:

01 VINNOVAs Focus on Impact - A Joint Approach for Impact Logic Assessment, Monitoring, Evaluation and Impact Analysis

02 Svenskt deltagande i EU:s sjätte ramprogram för forskning och teknisk utveckling. *Only available as PDF*

03 Nanotechnology in Sweden - an Innovation System Approach to an Emerging Area. *For Swedish version see VA 2007:01*

04 The GSM Story - Effects of Research on Swedish Mobile Telephone Developments. *For brief version in Swedish or English see VA 2008:07 or VA 2008:06*

05 Effektanalys av ”offentlig såddfinansiering” 1994 - 2004

06 Summary - The GSM Story - Effects of Research on Swedish Mobile Telephone Developments. *Brief version of VA 2008:04, for brief version in Swedeish see VA 2008:07.*

07 Sammanfattning - Historien om GSM - Effekter av forskning i svensk mobiltelefoniutveckling. *Brief version of VA 2008:04, for brief version in English see VA 2008:06*

08 Statlig och offentlig FoU-finansiering i Norden

09 Why is Danish life science thriving? A case study of the life science industry in Denmark

10 National and regional cluster profiles - Companies in biotechnology, pharmaceuticals and medical technology in Denmark in comparison with Sweden

11 Impacts of the Framework Programme in Sweden

12 A benchmarking study of the Swedish and British life science innovation systems. Comparison of policies and funding. *Only available as PDF*

13 Looking over the Shoulders of Giants - A study of the geography of big pharma R&D and manufacturing operations. *Only available as PDF*

14 Utvärdering av MERA-programmet

VINNOVA Forum VFI 2007:

01 Universitetet i kunskapsekonomin *(Innovation policy in Focus)*

02 Tillväxtgenvägen - affärsinnovation i svenska tjänsteföretag *(Innovation policy in Focus)*

VINNOVA Information VI 2009:

01 Forska&Väx - Program som främjar forskning, utveckling och innovation hos små och medelstora företag

VI 2008:

01 Upptäck det innovativa Sverige.

02 Forskningsprogrammet Framtidens personresor - Projektbeskrivningar

03 Passenger Transport in the Future - Project Descriptions

04 Vehicle ICT - Project Descriptions

06 Årsredovisning 2007

07 Innovationer och ledande forskning - VINNOVA 2007. *For English version see VI 2008:08*

08 Innovations and leading research - VINNOVA 2007. *For Swedish version see VI 2008:07*

09 Forskning och innovation för hållbar tillväxt

10 Swedish Competence Research Centres - within the Transport Sector and funded by VINNOVA

11 E-tjänster i offentlig verksamhet. *For English version see VI 2007:18*

12 VINN Excellence Center - Investing in competitive research milieus

13 Relationships between R&D Investments, Innovation and Economic Growth - A Conference Summary

14 Arbetslivsutveckling för global konkurrenskraft

15 Innovationspolitik och tillväxt - En seminarierapport från Svenskt Näringsliv, IF Metall och VINNOVA

16 Den kompetenta arbetsplatsen - Forskning om kompetems i arbetsplatsens relationer. Programkatalog

17 Nya möjligheter för små och medelstora företag - Rapport från VINNOVAs seminarium för småföretag 3 september 2008

18 ”No wrong door” alla ingångar leder dig rätt! - Erbjudande från nationella aktörer till små och medelstora företag

19 Forskning om kvinnors företagande - Presentation av projekten

20 MERA-programmet - Projektkatalog 2008

21 The MERA-program - Project Catalogue 2008

22 VINNVÄXT - A programme to get Sweden moving! Regional growth through dynamic innovation systems

23 Research on Women´s Entrepreneurship - A presentation of the ten projects funded by the programme

24 Mobilitet, mobil kommunikation och bredband - Branschforskningsprogram för IT & telekom

25 The Future in clean Transport - Stockholm 2009

VINNOVA Policy VP 2009:

01 TRANSAMS uppföljning av ”Nationell strategi för transportrelaterad FUD” åren 2005 - 2007. Två uppföljningar - en för 2005 och en för 2006 - 2007. *Only available as PDF*

VP 2008:

01 Forskning och innovation för hållbar tillväxt - VINNOVAs förslag till forsknings- & innovationsstrategi 2009-2012

02 Offentlig upphandling som drivkraft för innovation och förnyelse. *Only available as PDF. For English version see VP 2007:03*

VINNOVA Report VR 2009:

01 Affärsutveckling inom trämaufaktur och möbler - hur skapas effektivare värdekedjor? *Only available as PDF*

02 Användarna och datorerna - en historik 1960 - 1985

03 First Evaluation of the Berzelii Centra Programme and its centres EXSELENT, UCFB, Uppsala Berzelii & SBI Berzelii

04 Evaluation of SAFER – Vehicle and Traffic Safety Centre at Chalmers - a Centre of Excellence with financing from VINNOVA

VR 2008:

01 Mot bättre vetande - nya vägar till kunskap på arbetsplatsen

02 Managing Open Innovation - Present Findings and Future Directions

03 Framtiden är öppen! Om problem och möjligheter med öppen källkod och öppet innehåll

04 First Evaluation of the Institute Excellence Centres Programme

05 Utvärdering av det Nationella Flygtekniska forskningsprogrammet - NFFP. Evaluation of the Swedish National Aeronautics Research Programme - NFFP

06 Utvärdering av Vehicle - Information and Communication Technology programmet - V-ICT

07 Kartläggning av ett halvt sekels jämställdhetsinsatser i Sverige

08 Politiken, offentlig verksamhet - en av tre parter i samverkan

09 Forsknings- och innovationspolitik i USA - Näringslivets fem roller

10 ”Born to be wild” - 55+... eller hur förvandla en global demografisk förändring till ett svenskt styrke- och tillväxtområde?

11 DYNAMO 2 i halvtid - Rapport från VINNOVAs konferens på Ulfsunda slott 10 - 11 april 2008

12 VINNVÄXT II - Generalist and Specialist Evaluation of process and knowledge development 2004 - 2007

13 Svensk makrologistik - Sammansättning och kostnadsutveckling 1997 - 2005

14 Leading Companies in a Global Age - Managing the Swedish Way

15 Chefskapets former och resultat. Två kunskapsöversikter om arbetsplatsens ledarskap

16 NRA Security - Swedish industry proposal for a National Research Agenda for security

17 University strategies for knowledge transfer and commercialisation - An overview based on peer reviews at 24 Swedish universities 2006

18 Vårda idéerna! - Trots många framgångsrika projekt inom vård och omsorg skapas inte varaktiga effekter. Varför förvaltas och utnyttjas inte idéerna?

19 Growth through Research and Development - what does the research literature say?

20 Sesam öppna dig! Forskarperspektiv på kvinnors företagande

VR 2007:

01 Design of Functional Units for Products by a Total Cost Accounting Approach

02 Structural Funds as instrument to promote Innovation - Theories and practices. *Only available as PDF*

03 Avancerade kollektivtrafiksystem utomlands - mellanformer mellan buss och spårväg. Tillämpningsförutsättningar i Sverige. *Only available as PDF*

04 VINNVÄXTs avtryck i svenska regioner - Slutrapport. *For English version see VR 2007:06*

05 Utvärdering VINNVINN Initiativet

06 Effects of VINNVÄXT in Swedish regions - Final report. *For Swedish version see VR 2007:04*

07 Industry report on exhaust particle measurement - a work within the EMIR1 project. *Only available as PDF*

08 Swedish innovation journalism fellowships - en utvärdering. *Only available as PDF*

09 Rörlighet för ett dynamiskt arbetsliv - Lärdomar från Dynamoprogrammet

10 Miljöbilar och biodrivmedel - Hur påverkas Sverige av EUs direktiv?

11 Evaluation report by the VINNVÄXT International Review Team.

12 DYNAMO Arbetsgivarringar för ökad rörlighet - En slututvärdering av projekt om arbetsgivarringar inom DYNAMO-programmet

13 Är svenskt management konkurrenskraftigt? - Trettio ledare om svenskt management, dess konkurrenskraft och framtida utveckling - resultat från en intervjuundersökning

14 First Evaluation of the VINNOVA VINN Excellence Centres NGIL, HELIX, SAMOT and ECO^2 together with the STEM Competence centre CICERO

15 Vart tog dom vägen? - Uppföljning av forskare och forskning vid nedläggningen av Arbetslivsinstitutet

16 Bättre cyklar - en analys av äldre cyklisters behov och önskemål. *For English version see VR 2007:17*

17 Better cycles- an analysis of the needs and requirements of older cyclists. *For Swedish version see VR 2007:16*

Production: VINNOVA's Communication Division
February 2009

VINNOVA´s mission is to promote sustainable growth
by funding needs-driven research
and developing effective innovation systems

VERKET FÖR INNOVATIONSSYSTEM – SWEDISH GOVERNMENTAL AGENCY FOR INNOVATION SYSTEMS

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