SAFER
Strategic and Operational Work Plan
Stage 6

January 1st 2024 – December 31st 2028
Revised November 2025

EXECUTIVE SUMMARY

Death and injury from road crashes are still the major threats to the daily life of people around the world. Every year, approximately 1.19 million people die in traffic, and SAFER wants to contribute to reduce the numbers killed or injured on the roads significantly. Road safety is integral to nearly every aspect of daily life around the globe. We step out from our homes into a road system that leads us to work, to get our food, and to many of our daily health needs and social activities. The influence of the road transportation system is so pervasive that its safety – or danger – affects a wide range of societal needs. Road safety – mobility without risk of death or injury - affects health, poverty, equity, the environment, employment, education, race and gender equality, and the sustainability of communities. In fact, road safety directly or indirectly influences most of the global UN Sustainable Development Goals.

SAFER Vehicle and Traffic Safety Centre at Chalmers is a collaborative platform for research and knowledge exchange where partners from society, academia and industry acquire and share knowledge to make a significant contribution to a safer road transport environment for *all*.

The knowledge generation platform is being realised through collaboration between universities, research institutes, industries, government authorities and other relevant actors. SAFER aims to contribute to the elimination of fatalities and serious injuries in the mobility system through multidisciplinary research, collaboration activities and knowledge exchange, and to make Swedish society, the academia and the industry into world leaders in safe transport. Chalmers University of Technology is our host and about 50 partners are participating in the collaboration.

SAFER started in 2006 and Stage 6 covers operational year 19 to 23; January 1st 2024 to December 31st 2028. The aim of this stage is to further develop the SAFER research platform with even more and deeper **research**, with an increased focus on adding a system perspective to our research, including a better understanding of humans' body and mind, prediction and forecasting of the future, providing principles for safety in products, services and infrastructures related to road safety. Also, we aim to taking even more advantage of SAFER's **ecosystem**, including **partners research resources and lab infrastructures**, further strengthened focus on **knowledge dissemination** and **utilisation** of our partners' research findings.

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INTRODUCTION

Welcome to SAFER Stage 6!

SAFER Vehicle and Traffic Safety Centre at Chalmers is a collaborative platform for research and knowledge exchange where partners from society, academia and industry acquire and share knowledge to make significant contributions to a safer road transport environment for *all*. SAFER was crafted to facilitate collaborative research and knowledge-building endeavours among the partners, all aimed at achieving Vision Zero and tackling the complex traffic safety challenges of today and tomorrow, far beyond what a single actor can accomplish. The SAFER environment sparks research ideas through its diverse set of networking activities, usually resulting in national, bilateral or European funded research projects feeding back knowledge to the community. SAFER is the go-to hub in Sweden for being up to date on various aspects of road transport safety including research, and it is an excellent networking arena with participation from renowned road transport safety experts and researchers. Strong collaboration across different stakeholders is the required path towards zero fatalities and seriously injuries.

SAFER's collaboration agenda is driven by the partners and their interests, but SAFER is also part of a larger societal project: the design and realisation of smart, sustainable road transport systems in cities and beyond. SAFER's role is to provide the science base for safe products, services, infrastructure as well as policies and legislation and to be a thought leader in safe mobility, offering world-leading knowledge.

The role of the activities within SAFER is to provide support to its partners to collaboratively create a science base for safe products, services, infrastructure as well as policies and legislation and to be a thought leader in safe mobility, offering world-leading knowledge.

The SAFER journey started in the early 2000´s, based on decades of successful collaboration between Chalmers and several partners, for instance in research on Whiplash Associated Disorders. Founded as a Vinnova competence centre in 2006, SAFER has over the years built a strong reputation, created a large number of partner projects with useful results, built knowledge through Master's and PhD studies, arranged seminars and conferences etc. Our success stories are many and through SAFER, the partners have delivered world-leading knowledge in areas like human body modelling, child safety, naturalistic driving data methods, safe automated driving, and road user behaviour.

The strategy and activities outlined in this plan cover the period from 2024 to 2028. The document will be revised regularly and updated when the strategic agenda and work plan need to be changed to help ensure that we are continuously relevant. When the term SAFER is used in this document it refers to the partnership according to the Main Collaboration Agreement.

WHY SAFER?

The societal need for collaborative transport safety research

A sobering figure is that a total of 1.19 million people die in traffic each year, and many, many more are injured. Also, road transport injuries are the leading cause of death for children and young adults aged 5-29 years. This is the primary answer to why we need to work together using the SAFER platform.

KEY FACTS

- The United Nations General Assembly has set an ambitious target of halving the global number of deaths and injuries from road traffic crashes by 2030 (A/RES/74/299).
- Road traffic injuries are the leading cause of death for children and young adults aged 5-29 years.
- Approximately 1.19 million people die each year as a result of road traffic crashes.
- More than half of all road traffic deaths are among vulnerable road users: pedestrians, cyclists, and motorcyclists.
- 93% of the world's fatalities on the roads occur in low- and middle-income countries, even though these countries have approximately 60% of the world's vehicles.
- Road traffic crashes cost most countries 3% of their gross domestic product (GDP).

Source: https://www.who.int/news-room/fact-sheets/detail/road-traffic-injuries

The global road safety agenda

The specific inclusion of road safety targets in Agenda 2030 reflects universal recognition that death and injury from road crashes are now among the most serious threats to the future of our people and planet. The UN Resolution states that the 17 goals are "integrated and indivisible, global in nature and universally applicable". This means that road safety is no longer a need that can be compromised or traded off to achieve other social needs. It implies, for example, that the safety risks inherent in raising speed limits should not be tolerated in order to realize economic benefits of faster traffic, and that investments necessary to improve road safety should not be diverted for other needs.

The Sustainable Development Goal 3, Target 3.6:

"Between 2020 and 2030, halve the number of global deaths and serious injuries from road traffic crashes, achieving continuous progress through the application of the Safe System Approach".

Even though many improvements have been made, road accidents and their far-reaching consequences on human and societal levels are of great concern to all actors in the road transport system. Out of ten lives lost in traffic, nine are lost in low- and middle-income countries. Notwithstanding, the number of road deaths is on the rise again even in some countries with impressive road safety records. The increasing share of vulnerable road users such as seniors, pedestrians, cyclists, and motorcyclists that become victims of road traffic raises particular concerns. In addition, the societal costs of traffic accidents are huge and in Europe alone the cost was in 2010 estimated to 130 billion Euro per year (the European Commission's Road Safety Programme 2011-2020: detailed measures). The European Union has set an ambitious target of near zero road traffic fatalities in 2050, and this can only be achieved by enhanced efforts in road safety research in close cooperation with other stakeholders.

What can be done to address road traffic fatalities and injuries?

Road traffic fatalities and injuries can be prevented. Governments need to take action to address road safety in a holistic manner. This requires involvement from multiple sectors such as transport, police, health, education, and actions that address the safety of roads, vehicles, and road users. Interventions include designing safer infrastructure and incorporating road safety features into land-use and transport planning, improving the safety performance of vehicles; enhancing post-crash care for victims of road traffic crashes; setting and enforcing laws relating to key risks, raising public awareness, and encouraging safety-enhancing individual behaviour. The role of all activities within SAFER is to support its partners to perform research and develop knowledge.

OUR COLLABORATIVE RESEARCH AGENDA AND WORK PLAN

The challenges we want to address

The overarching targets and goals for a sustainable mobility system are the same whether the focus is on carbon neutrality, efficiency, safety, or other aspects, keeping in mind that all of them need to go hand in hand in order to provide the necessary changes compared to the current system. Also, one must take into consideration that needs and solutions will vary considerably in different parts of the world, but also on a more local level, where the needs also vary within a country, not least in Sweden. Some of the main characteristics of the future mobility system that we want to contribute to, are that it is:

- Safe and trustworthy
- User focussed, inclusive and accessible to *all*
- Climate neutral

In light of the persistently high rates of fatalities and injuries resulting from road accidents, it is imperative to emphasize that Vision Zero serves as the fundamental principle. However, it is crucial to recognize that achieving this goal demands a comprehensive approach that extends beyond merely advancing technology. This endeavour encompasses multifaceted strategies encompassing research and technological advancements, as well as a broader spectrum of measures aimed at enhancing safety. These measures encompass incentives, behavioural modifications, policy reforms, and legal regulations, among others. Consequently, the commitment to Vision Zero remains central to SAFER's sixth stage, underscoring the need for a holistic approach to road safety enhancement.

For those approximately **1.19 million people killed** in in road accidents, and many more injured each year, we see that there are **large differences** globally as well as a clear lack of equity. Part of this can be attributed to **gaps in knowledge among road users**, but also that the **transport and mobility landscape is ever changing**, making it difficult to keep up with new needs, new types of mobility etc. In certain parts of the world, including our own, it is also a challenge to keep road safety on the **political agenda**, among all other urgent needs and challenges.

The five challenges we would like to address in SAFER Stage 6.

Vision and Mission

Our Vision:
A road transport system safe for *all.*

Our Mission
We are bringing people together, conducting research and leveraging knowledge to enable safe sustainable mobility.

Research scope

SAFER's research **scope** has a human centric approach where movement includes road travel for example, as pedestrians, cyclists, in various vehicles and transport services. We cover a "complete-travel-perspective", from door to door, in which a human is interacting with the road transport environment.

Identity and values

SAFER has a unique identity with clear values such as openness, mutual respect, curiosity, and joy of discovery. We are passionate to make a difference, contribute to society, build relevant knowledge and we understand the benefits from interdisciplinary expertise and talents. Collaboration is a hallmark and thrives on diversity in all aspects and borderless networks seeking and attracting expertise where it is to be found.

Overall objectives

Together, we want to create new knowledge and research findings that enable a safe, sustainable, trustworthy, user focussed and inclusive transport system accessible to all. Vision Zero is our guiding star and we want to make significant contributions to this bold vision; to the saving of lives and reduction of risk factors and injuries in traffic. The research and knowledge we provide is intended to be used as a scientific base for products, services, public information, policies and legislation that enable safe road transport from a door-to-door perspective.

During stage 6, we aim to influence, facilitate, and execute world-leading transport safety research addressing the challenges described on page 8. The goal is to maintain and develop the role as the national centre for road safety research in Sweden and being an internationally renowned collaboration platform.

SAFER's collaboration process and key building blocks

Contributing to our vision and the global road safety agenda to address the identified challenges, as well as being a nationally and internationally well renowned collaboration platform, we bring people together and base our strategy on three blocks in our working process that direct and form the basis and foundation of our activities; *Gathering needs, forming constellations and facilitating hosting a project portfolio of high scientific quality* as well as the *providing dissemination, science outreach and utilization.*

SAFER's collaboration process

Block 1: Gathering needs, forming constellations and facilitating co-creation

Gathering partners from industry, academia, research institutions, and governmental bodies, SAFER constitutes a unique set of partners and competences. Within this network, SAFER partners collaborate to facilitate dialogues, promote, and support project generation, develop networks and partnerships as well as act as a catalyst for joint projects (details in page 18-20). As such, SAFER can find, interact with, and influence

funding partners as well as framework programs, roadmaps, and research agendas. This is based on the following activities:

- **Monitoring and analysis of trends, challenges and developments in the area of traffic safety**. This is done in a variety of ways, where the Working Groups is one of the key activities.
- **Project facilitation and funding opportunities:** Initiating, co-creating, and facilitating multidisciplinary project creation from idea to execution, as well as seeking and promoting funding opportunities.
- **Networking and partnership development**: Cultivating and nurturing the network and partnership. Identifying key stakeholders for dialogues, knowledge exchange, and project generation.
- **International influence and advocacy**: Use the strong commitment and trust within SAFER platform to prepare input to relevant activities influencing the international research agenda, funding opportunities, and policies. Accessing national and international programs and platforms. Advancing the global traffic safety agenda through research, innovation, and funding advocacy.
- **Collaboration facilities**: Co-creation areas and office workplaces and suitable AV equipment and collaboration tools, supporting centre collaboration and knowledge exchange.

Block 2: Leverage knowledge and know-how

SAFER's role as a national collaborative platform for research and knowledge exchange entails a responsibility to maintain an overview of the knowledge development within traffic safety in Sweden. A structured portfolio of the partners' projects is a strategically important resource for the daily operations that both gathers and organizes the knowledge built up by the partners – both currently and historically. By making the partners' projects and results visible, better conditions are created within the platform to disseminate knowledge effectively, both within the network and to external actors. The dissemination activities are crucial for ensuring that research is put to practical use and makes a real difference in practice.

The operational team initiates and proposes how knowledge can be translated into concrete activities by packaging research results in various forms – for example seminars, webinars, conference contributions, podcast episodes, inspirational materials for workshops, or communication materials. The aim is to increase the benefit of SAFER's partners' collective knowledge and contribute to more knowledge-based traffic safety work in practice.

- **Facilitates collaboration and synergies:** By having an overview of partners' ongoing research, it becomes possible to connect the right people, projects, and initiatives – both within the network and externally.
- **Time savings and efficiency:** Having a consolidated and updated overview saves a lot of time for the operational team. Instead of having to inquire about ongoing projects, results, or research activities, we can quickly get a comprehensive picture.
- **Attractiveness for funders, new and existing partners:** It is not only about showing who is part of the network but also concretely demonstrating the research that the partners are actually conducting. A potential new partner then gets a clearer picture of what SAFER generates and how their own

research might fit in. Funders also get a clear view of how research can be scaled up through the platform.

- **"Support" for projects:** Through the SAFER platform, project partners are offered services such as disseminating results, addressing new research questions, transferring results from partner projects to society (utilization), enabling participation in SAFER's mini-conferences, using the network for workshops, demonstrations, events, and studies, as well as facilitating collaboration between different parties.

Block 3. Providing dissemination, science outreach and utilization

SAFER offers an arena and several channels for dissemination of research findings enhancing the voice of all partners reaching out to relevant stakeholders, including key financiers and decision makers both nationally and internationally. See more details about our collaborative activities and outreach on pages 18-20.

- **Communication expertise and effective dissemination**: We leverage our communication expertise to effectively share our research through established channels and tools, promoting the widespread distribution of findings. Our website, project tools, and various communication channels facilitate the dissemination of results and support new research funding, advancing road safety and our collective mission of zero traffic fatalities.

- **Impactful events:** We host workshops, seminars, and conferences with precision, fostering environments where inspiring discussions and collaborative actions thrive. Our commitment to knowledge exchange enables progress in road safety initiatives.

- **Renowned brand and unified communication:** SAFER's reputation as a respected collaboration platform and its role as a communication channel unite diverse stakeholders, offering the partners a highly credible channel for sharing insights and mobilising efforts toward our shared goal.

The facilitation process and toolbox

At SAFER, partners can easily present their traffic safety challenges, needs, or questions and request support. We have a well-established process dedicated to addressing the challenges and needs of both our partners and society. These needs can be tackled through various avenues within our platform, such as our working groups or our operational team. Our Steering Group plays a crucial role in ensuring that these requests are acknowledged and met through a range of activities and the utilization of our facilitation tools. These versatile tools shown in the figure below empower us to jointly and effectively address and overcome traffic safety challenges, fostering innovation, and improving road safety outcomes.

Our facilitation toolbox includes:

- Arranging knowledge-building seminars
- Roundtable dialogue to find state-of-the-art solutions
- Workshops for project creation
- Initiating new Working Groups
- Inviting external experts
- Gaining insights through meetings with experts within the platform
- Utilizing existing knowledge in SAFER's knowledge bank
- Support during the project application phase
- Leveraging the SAFER Idea Exploration program
- Organizing study tours to partners or other sources of knowledge
- Addressing matters within different parts of the ecosystem
- Conducting demonstrations, e.g., utilizing partner's research resources and lab infrastructures

Enhancement of system level impact – an integral part of the facilitation process

We intend to use the safe system principle approach continuously in our research. The safe system approach recognizes that road transport is a complex system and that humans, vehicles and the road infrastructure must interact in a way that ensures a high level of safety. Also, the system aspects need to be regarded on (at least) two different levels: the combination of relevant components or sub-systems creating, for example, a safer vehicle; and the implementation in the society, creating a safe transport system. Through these strategic efforts, SAFER strives to make a substantial contribution to enhancing impact at the system level.

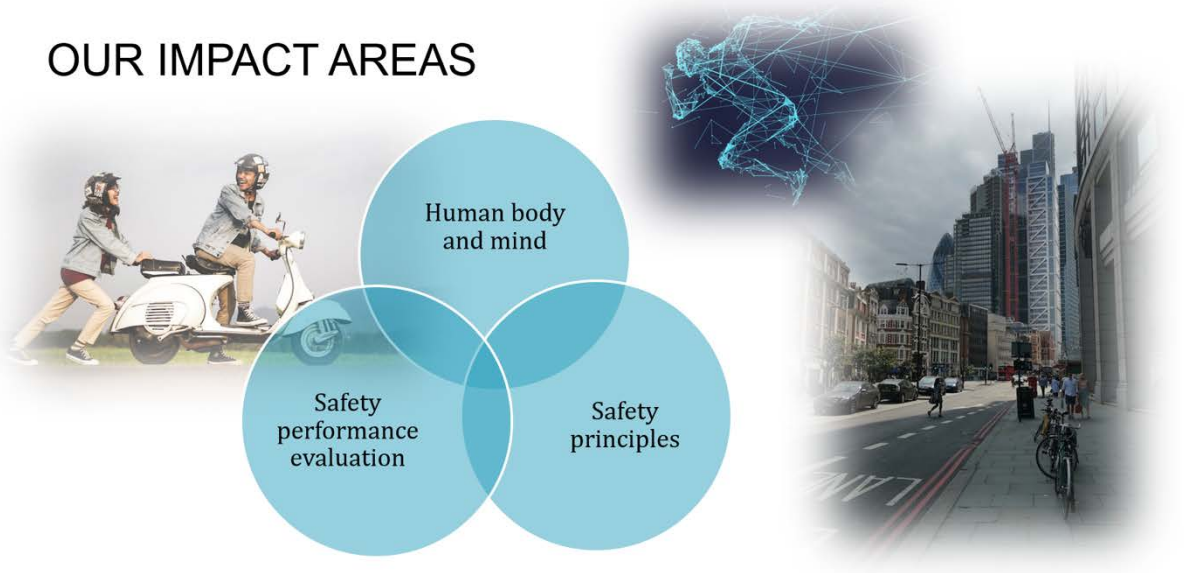
Project synergies and system-level initiatives: Connection and alignment of partner projects when suitable, encouraging system level activities

Actor identification: We identify relevant stakeholders and actors.

Interplay emphasis: Our focus lies on understanding and optimising the interplay and interactions between system components.

The Impact Areas – content and strategic focus

We have outlined three main headings where the clear benefit from the SAFER collaboration will be obvious, based both on the current strengths as well as projected future needs. We aim to use these to put different activities into a context, e.g. clustering partner projects, working groups and dissemination activities:



Human Body and Mind

Here we address our understanding of the human from the aspects of tolerance to mechanical loading and behaviour in traffic. The research activities typically focus on modelling of the human and studying the safety of interactions between road users and between the human and the vehicle in the mobility system. The interaction could be with the driver/rider themself, another occupant, another vehicle (and its driver/rider), any external road user, or the infrastructure. Equally, the vehicle is not defined (deliberately), as the challenge remains regardless as to whether this is a truck, bus, car, highly automated or not, powered two-wheeler, bicycle, or future mobility device.

This impact area includes, e.g.:

- Biomechanics / Injury mechanisms / Principles for protection
- Human body and human behaviour modelling
- In-crash protection (protective features, systems, and structures)
- User monitoring and support
- Long-term and short-term behaviour change

Challenges

This broad impact area helps SAFER keep the human at the centre of our thoughts and in focus within our transport system research. It contains both road user behaviour aspects as well as those relating to how we can protect the human body. From the human perspective we want to be able to define what is safe during all travels, door-to-door, regardless of the mode of transport. The challenge posed by this is heterogeneity, the differences between different people, the different vehicles available to us, different choices and behaviours and different tolerance to loading. Into the future we see an increasing need to consider different levels of automated driving in this research domain too and that remains a focus. This brings further specific challenges regarding our abilities to monitor driver state and position, and fitness to drive, even how to modify behaviours and positions towards a safer system.

Examples of research questions

- How do people understand and use technology, e.g., vehicles and mobility services?
- How can we support road users to take safe decisions and actions?
- How can we ensure safe interactions between humans and automated vehicles?
- Can we create a virtual model of the human that represents our variability?
- If we can predict human actions and reactions, how do we generate trust in our models?
- How can we facilitate a modal shift towards more sustainable and active travel?

How SAFER contributes - our tools and assets

Within SAFER, we have a broad range of partner projects and expertise that fits within this impact area. This represents a traditional and continuing strength with a unique blend of partners and competences. Already through existing research, SAFER is building expertise in assessing driver state and readiness to respond,

postural preferences, representation of various human tolerance, amongst other topics related to the human. As we learn more about the interactions between, e.g. the frequency and urgency of response, preferred seating posture and in-crash protection, we see that it maybe through bringing these domains together that we can represent humans more completely in our safe system approach. In order to improve and encourage our way of presenting and communicating the expertise as well as the results, we will concentrate on continuity for those researchers active in a particular aspect of human modelling. Likely, there will remain some working group division into biomechanical and behavioural perspectives so that we can apply our knowledge effectively; but more importantly, we will also strive towards increasingly strong links between disciplines where that supports the activities of our partners.

Human body and mind research at SAFER is rich with resources to support our studies. Examples of the many environments available at SAFER are settings in the laboratory, proving ground, vehicle and bike simulators, finite element simulations, and even ergonomics simulations. The human models and particularly the SAFER Human Body Model are tools that we can use proudly to study the potential to protect road users in crashes.

Expected outcomes

As well as organic developments in each domain, dedicated tasks may well be necessary to form bridges between knowledge centres. For example, pre-crash behavioural choices and in-crash protection could be a focus where SAFER offers a place to collaborate across human body and mind. Not only do we need to be able to monitor driver state and position during a whole trip, but we will also need to come together and decide how to use that information to better protect against injuries and prevent crashes. Indeed, concentrated tasks may be needed so as to capture best practice principles coming from our collective research.

Safety performance evaluation

In the impact area Safety Performance Evaluation, our research is dedicated to advancing vehicle and traffic safety through innovative analysis techniques. Our mission is clear: to develop models that are transparent, scalable, and sustainable, all grounded in real-world data and assessment methods. In doing so, we play a crucial role in creating trust in emerging safety systems, a critical endeavour in today's rapidly evolving transportation landscape.

Challenges

Our research confronts several challenges, including data quality and accessibility, trend prediction, evaluation of future safety features, and incident analysis. Additionally, we explore the concept of a traffic safety footprint and emphasize system-level analysis, virtual testing, and robustness evaluation.

Examples of research questions

- What methods should be used for data interpretability and assessment quality, including streaming data?
- What safety performance indicators should be used to identify base level, trends and predictions?

- Can traffic flow simulations be used to predict safety performance?
- Forecasting trends in emerging mobility solutions.

How SAFER contributes – our tools and assets

We play a crucial role in SAFER partner' research projects related to new safety strategies. Our studies are instrumental in predicting the effectiveness of new safety systems and building confidence in their market adoption. SAFER's position in the global research community is strengthened by our extensive naturalistic datasets, covering approximately 6.5 million kilometers of real-world driving across diverse contexts and vehicles.

Expected outcomes

Our efforts in Safety Performance Evaluation are foundational to SAFER's overall research agenda. We provide essential insights that guide future safety research activities. Our expected outcome involves statistical analysis of road traffic data, encompassing accidents, incidents, and near-miss data. We also aim to contribute with insights in methods for recording and sharing data.

Safety principles

The Impact Area Safety Principles focuses on addressing safety for individual components such as vehicles and infrastructure, as well as the interactions between them to capture the challenges of the whole mobility system. Our primary objective is to reduce fatalities and injuries, by preventing road accidents in the first place.

Challenges

The Safety Principles encompasses a large research area ranging from sensor performance to system perspective where automated vehicles (AV) are one opportunity for increasing road safety, among others. We will have manually driven vehicles (MV) on roads for a foreseeable future and advanced driver assistance systems (ADAS) still play a crucial role in avoiding accidents. Research on ADAS and AV together with integrating the MV and AV into the overall mobility system tighter are pivotal to keep pushing for the Vision Zero.

In the Safety Principles, we address several vital areas:

- Research on and technical development of sensor technology is the cornerstone for facilitating ADAS and AV
- Functional safety of ADAS and AV
- Safety culture captures the attitude, values and beliefs in the daily work with safety features
- Integration of MV and AV in the mobility system

Examples of research questions

- When is an AV safe enough to be operated in its operational design domain?

- Validation and verification of new sensor technology
- How to improve the safety culture and move towards safer products in the mobility system?
- What role can wireless connectivity play for increased safety? How can data be trusted stemming from a source outside of, e.g., the vehicle?

How SAFER contributes - our tools and assets

To address these research questions and challenges, SAFER leverages a comprehensive set of tools and assets, including:

- Expertise in safety aspects related to vehicles, road users, and infrastructure as we move towards higher levels of automation.
- Development of a robust scientific foundation for verification and validation methods in the complex field of automated mobility.
- Establishment of a basis for future standardisation of test methodologies.
- Strengthening our connections and capabilities in the realm of Artificial Intelligence (AI), recognizing its increasing importance in our society.

Expected outcomes

The anticipated outcome of our efforts within this impact area is a safer and more efficient mobility system that reduces fatalities, injuries, and accidents. Through our research and collaboration, we aim to facilitate the successful integration of self-driving vehicles and advanced mobility solutions into society. This will not only enhance traffic safety but also promote greater efficiency in transportation systems. Our work will contribute to shaping the future of mobility, ensuring that it aligns with the principles of safety, effectiveness, and sustainability.

SAFER's idea exploration program

To support the development of the project portfolio, the SAFER idea exploration program is an important part of how we facilitate and influence research. In this program, we fund research and research supporting activities that can bring value back to SAFER's partners, supporting our vision to contribute to a safe road transport system for all. Some examples of activities we support:

- Pre-studies on emerging or entirely new topics and strategic areas.
- Getting started with strategic knowledge creation that can be leveraged e.g., by using the new competence as a basis for national funding or an entry ticket to prestigious international collaborations.
- We also welcome proposals that are of a different nature, for instance for finalization of publications from a completed project or investigation of a new area. Simply put, projects that lead SAFER forward and contribute to the continued development of our collaboration platform.

Collaboration activities

Along with hosting and learning from the project portfolio, SAFER carries out a diverse set of collaboration activities to spark research ideas, build and exchange knowledge.

SAFER - the knowledge node

Our partners especially appreciate how they can meet across borders through SAFER, be part of knowledge transfer, gain benefits through collaboration, receive new knowledge about road safety and the transport system as well as conduct more relevant research, innovation and product development in a multidisciplinary context. SAFER is perceived as a well renowned international centre of research excellence and a knowledge node. Personal meetings, knowledge exchange and networking are obvious and important components. By meeting, needs are consolidated and transformed into project ideas and applications. Individual matchmaking is carried out to create the best cooperation constellations possible.

Our communication goals:

- SAFER's partners receive valuable information and see SAFER as a knowledge node.
- Our knowledge outreach contributes to increased road safety and a safe, sustainable transportation system.
- Partners meet, projects are initiated, and solutions are developed in broad collaboration and thereby can reach implementation and commercialisation faster.
- Our communication influences the international road safety research agenda, funding opportunities and policy development.
- The competence within Swedish companies and organisations becomes better known.
- We attract partners, international stakeholders, collaboration projects and support partners in attracting funding.

We bring actors together in a variety of ways….

- **SAFER Research days:** Serve as a dynamic, open-for-all mini-conference, fostering networking, deep-dive discussions, and inspiration while addressing diverse themes aligned with our partner's needs. They adopt themes based around the Impact areas, featuring special guest speakers, presentations, and feedback sessions, all aimed at enhancing our research network and exploring potential funding opportunities. Aim to broaden engagement by hosting knowledge exchange sessions where we introduce our latest portfolio of partner projects, facilitating discussions, networking, and gathering feedback and innovative ideas from a diverse audience.
- **SAFER Working groups:** These groups serve as the main forum for inspiration and the cultivation of novel ideas, which subsequently evolve into new projects or other activities.
- **Project creation workshops:** Smaller groups meet with need owners, specialists and research practitioners for specific calls or to address areas within our research plan where we benefit from creating research activities.
- **SAFER Seminars**: Seminars of different kinds with both external speakers and experts from the SAFER community with the purpose to spread knowledge and discuss relevant topics. Some seminars are public and some of them are for the SAFER community only.
- **SAFER Thursday lunch seminars**: Almost every Thursday, the network members meet for a joint lunch, listen to a presentation and discuss. The main objectives with the seminars are to share knowledge about our research and other topics related to saving lives in transport. We aim to inspire to create new partner projects and boost dialogue and collaboration in our network.
- **Hosting or co-hosting conferences**: Enabling partners to gather, build knowledge and disseminate/publish their research results is an important cog in our collaborative work. For example, our own International Conference on Driver Distraction and Inattention, has been arranged biannually since 2009. We are open to additional co-hosting opportunities during this phase.
- **Project events**: Reporting and discussing results from partner projects. Carried out within the projects but the invitation is distributed through the SAFER network.
- **General Assembly:** Regular meetings with the partners where the agreement is followed up, new partners are approved and future issues for SAFER and changes in the workplan are discussed.
- **Other networking activities**: Building trust and close relations are of uttermost importance to create long term commitment and engagement to collaborate in research. To support, we arrange inspiring events to network and get to know each other even better, or example we invite to networking lunches and fika, breakfasts events and study tours to our partners.

… and spread knowledge….

…through e.g. website, newsletter and LinkedIn. The SAFER operational team is responsible for the communication.

SAFER Knowledge library: In our digital library you will find most of the SAFER partner project publications that have been produced since the start in 2006.

Saferresearch.com: On our website you can for example find our partner project portfolio, event calendar, news, contact details, research publications, annual reports and information about our eco-system and funding opportunities.

Conferences and other external events: We present our research findings and participate in various external dialogues – we are often asked to contribute with our knowledge.

Newsletters: Monthly public newsletter to about 1500 subscribers about partner projects, research results and other updates from SAFER.

SAFER Update: Regular webinars to briefly inform the partners about upcoming collaboration opportunities, events and other relevant news from the collaboration.

Social media – LinkedIn: We have a steadily growing number of followers and great opportunities to get even broader visibility.

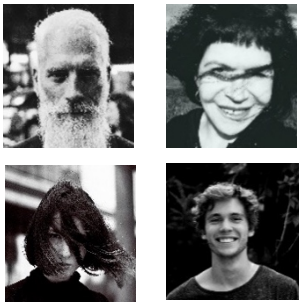
Podcast Liv och Trafik is a knowledge podcast about traffic safety in Swedish containing interviews about transport safety research, successful practices, and policies. The responsible publisher is NTF Väst in collaboration with SAFER.

E-mail lists: All engaged researchers and other people at the collaboration parties are invited to our collaborative activities.

Target groups for communication

The priority target groups for SAFER' communication is identified as:

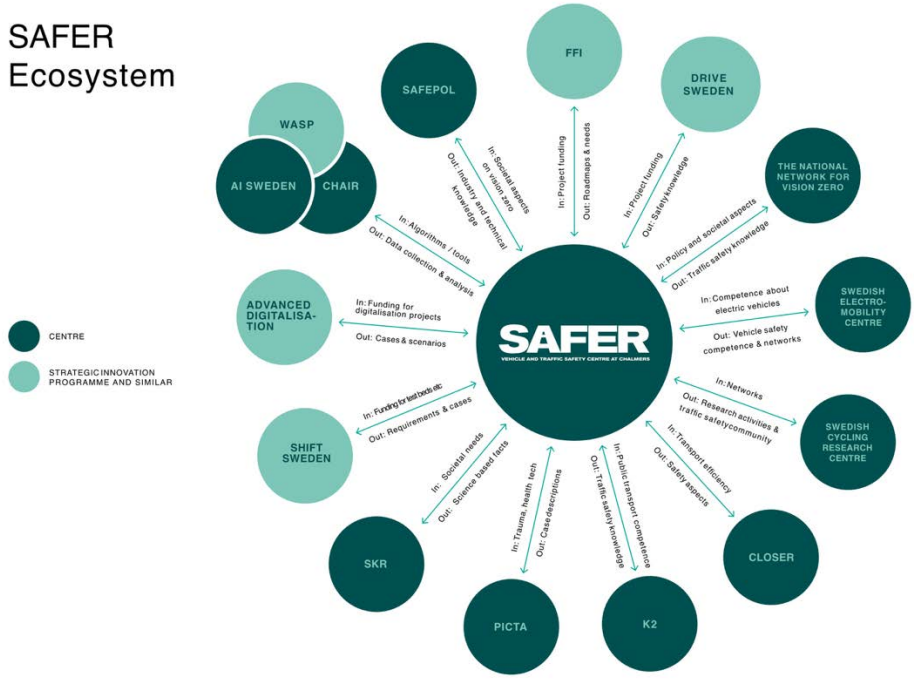
- Partner's organisations
- Researchers (academia & research inst.)
- The industry
- Governmental agencies / financiers
- Political bodies and policy makers
- Students
- Media



SAFER aims to further develop the dissemination of valuable research results and knowledge exchange through, and to, the partners during Stage 6.

Our eco-system

A cornerstone in the strategy is to be a multidisciplinary research environment that also serves as a physical meeting place, open to all partners. This also contributes to the development of larger clusters and SAFER is an important part of the research and innovation ecosystem around sustainable transport systems and smart cities. The purpose is to form an extended safety research environment, which connects researchers from industry, academia, institutes, and the public sector. In certain cases, this also helps to combine and enhance work carried out within SAFER, aligning it with research activities financed through other programmes. In SAFER Stage 6, we will focus on taking even more advantage of the ecosystem and the world around us in order to leverage the efforts put in by the partners. Examples of actors in our Swedish ecosystem at the beginning of stage 6 is shown below.



Geographic location

Lindholmen Innovation District is one of the most knowledge-intensive and expansive area in Gothenburg and is a hub for automotive and sustainable mobility research. The location is full of life and energy that allows us to meet and learn about each other's ideas. The venue as such forms an environment that enables collaboration between different disciplines.

All SAFER partners have access to our collaboration premises; a 200 sqm working area including workplaces as well as meeting rooms , conference facilities and networking and co-creation areas.

International collaborations

SAFER may be based in Sweden but has a truly global mindset. Our international commitment is wide, having vital partnerships with universities and transport safety research communities all over the world. By initiating and participating in global collaborative research, we strongly influence the political traffic safety agenda and contribute to the development of sustainable and safe mobility – in Sweden, and elsewhere. In SAFER Stage 6 the aim is to take even more advantage of the ecosystem and world around us in order to leverage the efforts put in by the partners. An up-to date-list of ongoing global initiatives can be found on SAFER website.

Goals for internationalisation

- Learn from the best
- Leverage international public funding
- Project brokerage
- Influencing the upcoming programmes
- Influence future standardization, where suitable
- Support our partners' international business development
- Share the Swedish way of cooperation, where suitable

Our internationalization strategy in brief

- Establish relationships with relevant centres of competence and excellence, wherever they may be in the world

- Through suitable activities influence EU research agendas, calls and programmes in order to secure long term funding of road safety research
- Create the best prerequisites for stimulating participation in EU projects, via for example upscaling existing partner projects for increased funding and widened knowledge networks
- Encourage presentations at international conferences and events
- National dissemination of EU project knowledge and results
- Engagement in bilateral programmes like SITIS (India)

Partners' research resources and lab infrastructures

The concept of research resources and lab infrastructures is a hallmark for SAFER. As a SAFER partner you get, through relevant projects, access to SAFER's open research arena and information about research resources available within the partner network. Also, expertise to use these is available within the community. The overall idea is that research should be easier, better and more efficient through close collaboration. This unique set of platforms includes for example full-scale road traffic safety test environments, simulators and a research lab for active safety and autonomous driving. Together, these resources allow outstanding opportunities for real-world testing and validation.

ORGANISATION AND MANAGEMENT OF THE COLLABORATION

Partners

Safe mobility is achieved through collaboration among talented individuals who share a clear vision. SAFER partners, including large and small companies, public organisations, universities, and research institutes, create and apply knowledge in safe mobility through collaborative research, producing tangible results. With close to 50 partners in SAFER's Stage 6, they collectively generate new knowledge, making travel safer for everyone.

Our partner organisations are the backbone of our operations, serving as our network, inspiration, and knowledge source. They influence our research platform by appointing representatives to key roles and participating in knowledge-creation activities. Additional organisations can become SAFER partners if they contribute to generating new knowledge and research findings that align with our common vision and research agenda.

Beyond partners, various stakeholders, including regions, municipalities, and cities, play essential roles in our ecosystem. Engaging stakeholders as problem owners and recipients of research results is important ongoing effort that will evolve throughout Stage 6.

The Steering Group - Guiding SAFER's Strategic Direction and Long-Term Impact

The Steering Group at SAFER plays a central role in securing the platform's long-term strategic direction and ensuring that the operations align with the vision, mission, Main Collaboration Agreement and the Strategic and Operational Workplan, operating in close collaboration with SAFER's partners and the

operational team. This group provides system-level governance, focusing on the strategic development of SAFER as a collaboration platform, including its functions and deliverables. The Steering Group does not govern the scientific content or direction of joint activities or individual partner projects, but ensures that SAFER as a platform remains relevant, balanced, and aligned with partner expectations and societal needs, in line with SAFER's value proposition. See the full description in appendix C.

The operational team - the heart of SAFER's daily operations

At the heart of SAFER's daily operations stands the Operational Team, the unit under the Director's purview. Their mission is to seamlessly manage the day-to-day functioning of SAFER, providing partner support to facilitate collaboration and project initiatives. This team serves as the driving force behind the utilization of SAFER's collaborative platform, both in the physical and virtual realms. Here are examples of key competences and activities:

- **Working Group support:** Facilitation of meetings, and other activities according to needs and available resources.
- **Needs capture:** Facilitating the process of capturing and addressing the diverse needs of SAFER's stakeholders.
- **Network and partner engagement:** Strengthening and expanding SAFER's ecosystem by connecting people, competencies and organisations. This includes maintaining close dialogue with existing partners, exploring new collaboration enquiries, and facilitating interactions with funders, visitors and external stakeholders.
- **Knowledge activation and research promotion**: Using communication expertise to support relevant research by making results visible, enabling knowledge transfer and catalysing collaboration across the network – ensuring that SAFER remains a dynamic platform for learning and innovation.
- **Using the partner project portfolio to build shared knowledge and system-level value:** Facilitating cross-cutting insights, identifying synergies and ensuring that results from partner-led projects are made visible and accessible across the SAFER network – so that the entire platform can benefit from the knowledge being generated.
- **Ecosystem enhancement:** Continuous development of SAFER's meeting place at Lindholmen Innovation District with strong connections to the surrounding ecosystem.
- **Event excellence:** Efficiently coordinating critical gatherings such as seminars, conferences, Research days, steering group meetings, and partner meetings, including the general assembly.
- **Tool accessibility:** Ensuring the availability of essential tools necessary for SAFER's efficient operation.
- **Meeting preparation:** Preparing for SAFER's Steering Group and General Assembly meetings, ensuring our decisions are well-informed and forward-thinking, aligned with partners' needs.

SAFER's working groups – the main forum for inspiration and idea incubation

These groups serve as the main forum for inspiration and the cultivation of novel ideas, which subsequently evolve into projects or other activities. Within the working groups, partners actively engage in focused discussions centered around specific research or demonstration/innovation themes.

Address challenges and needs: These groups launch activities in response to their own identified needs, fostering a close and dynamic collaboration with the Steering Group where the working group leaders will participate on a regular basis to report, get feedback and support, sharing best practice, as well as identifying cross-thematic issues. Each group agrees on the scope and deliveries, documented per group.

Expected outcome: The expected outcome will differ between the groups, but the expected outcome needs to be very clear for each working group and should be clearly defined prior to starting a group. Examples:

- Identify research questions
- Build a large project proposal
- Dig into specific research questions more in depth (note that this may be done by creating smaller sub-topic specific Working Groups, or as part of the larger groups)
- Get ideas for funding (existing or influence)
- Create a contribution, e.g.: conference paper, white paper or position paper
- Build knowledge in a new area - insights

Strategic alignment and governance: Each Working Group is led by a designated leader, with the option of a co-leader. Leaders are appointed by the Steering Group and receive initial support from the operational team, with continued assistance provided as needed and depending on available resources. Working Groups report directly to the Steering Group, ensuring a clear line of communication and strategic alignment.

Integration and knowledge exchange: To strengthen cross-group connections and ensure system-level impact, Working Group leaders are regularly invited to Steering Group meetings. This enables mutual learning, identification of support needs, and strategic guidance across the platform.

Collaboration, learning and planning: Dedicated meetings will be held between Working Group leaders to exchange experiences, address emerging needs, and plan joint activities. Leaders are also invited to take an active role in shaping SAFER's annual operational plan. Close ties to key events – such as SAFER Research Days – ensure that results, insights and engagement from Working Groups feed into the broader community and create opportunities for shared learning and inspiration.

Open and welcoming: The groups welcome all partner employees to participate. Each team maintains a list of individuals interested in the specific topic, ensuring they receive invitations. Participation levels may vary depending on the meeting's topic and relevance to the participants.

Flexible and engaging meetings: Meetings are normally conducted in a hybrid format, designed for transparency with easily accessible documentation, promoting shared learning.

Appendix A: SAFER's Value Proposition

Decided by the SAFER Board 2023-10-13

SAFER Asset	Value/Benefit
Unique network	The SAFER network gathers all relevant stakeholders who interact through the diverse set of networking activities. Our community consists of a diverse mix of researchers and experts from industry, academia, research institutions, and government bodies. As a partner, you enjoy opportunities to: • **Establish relationships** with people across partner organizations. • **Share insights** and expertise with peers and visiting external experts. • **Collaboratively initiate and lead research** projects, inspire innovative solutions based on identified needs and concepts. • **Identify suitable collaborators** for ground-breaking projects. • **Gain access** to national and international programs and platforms, e.g. Drive Sweden and ERTRAC.* • **Access experienced peers**; who can help shape your research towards its most valuable impact, guide formative ideas or help build your network for the next project proposal.
Joint resources	SAFER is a node for accumulated knowledge about road safety and has physical resources that the parties can use. Via SAFER, you as a partner get access to: • **Proactive facilitation**: a dedicated centre management team committed to initiating collaborative projects and sharing knowledge. • **Expansive knowledge repository**: A continually growing wealth of research findings and publications, databases, models, methods, and demonstrators for seamless integration into your organisation. • **Dynamic working groups**: Agile working groups treating different aspects of traffic safety from research to deployment perspectives, which cannot be addressed by partners on their own. • **Collaboration facilities**: Premises with co-creation areas and office workplaces and suitable AV equipment and collaboration tools, supporting centre collaboration and knowledge exchange. • **Research resources**: Associated research assets that facilitate and support the implementation of research projects, e.g. AstaZero, SAFER HBM, Revere and relevant datasets. • **Dissemination channels**: Well-established channels and tools that facilitate the dissemination of research outputs to the community.
Strategic influence	SAFER's renowned brand and its role as a communication platform provide parties with a unified, highly credible communication channel. As a partner, you can utilize SAFER to connect with:** • **Targeted audiences**: effectively reaching specific target groups. • **Research funders** to shape forthcoming research programs. • **Decision makers** in politics and authorities, both nationally and internationally, to influence road safety agendas, policies, and legislation.
Funding opportunities	As a partner in SAFER, you can **get funding** through our internal calls. These funds can finance exploratory pre-studies, investigating research questions before seeking external financing, as well as other idea exploration activities. The financial contribution to SAFER is multiplied in the project portfolio. Additionally, SAFER offers **guidance and assistance** in national and international project funding opportunities.
	** NB: this means that relevant open information is packaged and clustered for the benefit of the area.*

	*** NB: as explained in this document, using SAFER as a platform for preparation and alignment where suitable*

Appendix B: Monitoring progress

In our operational plan, we outline these primary approaches for tracking our progress toward realizing our vision and communicating our key outcomes:

1. Measurement of parameters

- Total number of partner projects ongoing
- New partner projects
- Finalised partner projects
- Number of SAFER partners per project
- Publication volume
- Number of co-creation events, seminars and other knowledge sharing activities
- Visibility / references in conferences
- Gender balance in Steering Group (women:men)
- Number of partners
- Partner Satisfaction Index
- Number of active Working Groups
- Number of doctors in SAFER connected projects graduated

2. Annual report presentation: In the annual report, we will provide a comprehensive overview of SAFER's development, including progress updates and significant facts.

Appendix C: Role description and rules of procedure for SAFER Steering Group

The Steering Group at SAFER plays a central role in **securing the platform's long-term strategic direction** and ensuring that the operations align with the vision, mission, Main collaboration Agreement and the Strategic and Operational Workplan. This group provides system-level governance, focusing on the strategic development of SAFER as a collaboration platform, including its functions and deliverables. The Steering Group does not govern the scientific content or direction of individual projects, but ensures that SAFER as a platform remains relevant, balanced, and aligned with partner expectations and societal needs, in line with SAFER's value proposition.

The Steering Group operates in close collaboration with SAFER's partners and the operational team, providing guidance and decisions based on SAFER's Main Collaboration Agreement and the Strategic and Operational Work Plan.

***Note**: In the Main Collaboration Agreement, the Steering Group is referred to as the Centre Board, and the role is regulated centrally by Chalmers University of Technology, which serves as the host of the centre. The updated organization and nomenclature is handled in the Second Amendment to the Main Collaboration Agreement, valid for 2026-2028*

Composition and structure

- The Steering Group comprises 7–13 members and one chair, including one permanent member from the Swedish Transport Administration and two from Chalmers University of Technology.
- All members must represent organisations that are partners in SAFER.
- The members and chairperson are nominated by a Nomination Committee and formally appointed by the President of Chalmers, based on a recommendation from the General Assembly.
- The Steering Group's composition should cover a broad range of expertise within the field of traffic safety and strive for a balanced gender distribution. The group should also maintain a national balance between societal actors, private industry, and academia.

Terms and meetings

- Members are typically appointed for a maximum three-year term, with the possibility of reappointment for an additional three years.
- The Steering Group meets for ordinary meetings at least 4 times per year and one annual strategic workshop to decide on goals and directions for the upcoming operational year.
- Meeting materials are provided by the operational team at least one week prior to each meeting.

Decision-making

- Decisions are made by simple majority vote. In case of a tie, the Chair holds the casting vote.
- The Steering Group is considered quorate when more than half of its members are present at the meeting. If the group is not fully staffed, those voting in favour must represent at least one-third of the total number of members. At least one representative from the host university must be present for decisions to be valid.
- If a member wishes to step down, the Nomination Committee is responsible for proposing a replacement to the General Assembly.

Expectations on steering group members

- Act responsible with a holistic perspective, always prioritising the best interest of SAFER as a whole.
- Contribute with personal expertise and professional networks to strengthen SAFER's strategic direction and impact.
- Promote collaboration over competition, fostering trust and shared commitment among partners.

Responsibilities

Governance and strategic planning

- Guide the development of the annual operational plan, including key platform activities (e.g. SAFER Research Days), ensuring alignment with partner and societal needs.
- Contribute to the development and agreement of SAFER's strategic direction and use of funds, by providing input on priorities and initiatives – including platform investments, system-level activities, and key events – and by engaging in a mutual decision-making process on the annual budget proposal submitted to the General Assembly, ensuring alignment with SAFER's mission and value proposition.
- Approve and revise strategic priorities and the platform's focus.
- Contribute to the development of the annual report.

Partner engagement

- Identify key competences and relevant new partners needed for the platform's long-term development, with consideration to both strategic alignment and scientific excellence.
- Review new partnership applications, ensuring the platform remains relevant, balanced and of high quality and prepare decision at General Assembly.
- Support partner engagement processes like the facilitation process, ensuring that partner needs are captured and relevant knowledge-building activities are initiated.

Platform development

- Contribute to foresight activities and knowledge transfer, bringing insights from each member's sector to inform the platform's strategic direction.
- Guide the content and scope of SAFER activities and events, including decisions on external invitations and larger financial commitments related to these activities.
- Initiate working groups for specific topics or urgent matters when needed.

Working Groups governance

- Act as a governing body for the SAFER Working Groups, ensuring cross-topic alignment and providing a system-level perspective.
- Approve the formation of new Working Groups, including the appointment of leaders and co-leaders as needed, and dissolve existing Working Groups if justified.
- Provide scientific and tactical support to Working Groups, serving as a sounding board for critical topics and system-level challenges.

- The Steering Group shall, when needed, actively encourage the formation of new Working Groups to address emerging challenges and opportunities within the platform.

The SAFER Idea Exploration Program and strategic funding

- Oversee the strategic direction of the Idea Exploration Program, including the evaluation of proposals and ensuring alignment with SAFER's purpose and strategic orientation.
- Decide on the allocation of SAFER funds for strategic tasks, projects, and platform-level initiatives. The Steering Group may establish (a) specific evaluation group(s) to secure the necessary expertise for funding decisions.

Other

- Represent SAFER externally, when appropriate, both in partner dialogues and at relevant external events, strengthening SAFER's network and visibility.

Appendix D: The Nomination Committee at SAFER

The Nomination Committee at SAFER plays a central role in ensuring a competent and balanced composition of the Steering Group. Through a transparent and inclusive process, the committee identifies and proposes candidates for the Steering Group. The Nomination Committee consists of 3–5 members.

Main responsibilities:

- Identify and evaluate candidates for the Steering Group.
- Ensure that the Steering Group consists of 7–13 members with relevant competence and commitment.
- Communicate openly and clearly about the nomination process to ensure that all partners and stakeholders have the opportunity to propose candidates to the Nomination Committee.
- Consider competence, experience and diversity, when nominating candidates, taking the triple helix balance into account.
- Prepare and present Steering Group nominees, including chair, for decision at the General Assembly.
- Work according to a professional, objective, and structured process for nomination and selection.

Working methods and mandate:

- The Nomination Committee is appointed by the General Assembly and operates independently in its assignment until the next General Assembly.
- The work is conducted in accordance with SAFER's main collaboration agreement.
- Ensure an open and inclusive process where all partners feel welcome to contribute with nominations.
- It is advantageous if members of the Nomination Committee have experience in recruitment and selection processes to ensure a thorough and fair evaluation of candidates.