PRE STUDIES AND SEED PROJECTS IN SAFER STAGE V

INFORMATION TO SAFER PARTNERS

BACKGROUND AND PURPOSE

WHAT IS A PRE-STUDY OR A SEED PROJECT?

Pre-studies on emerging or entirely new topics and strategic areas are needed to develop SAFER according to partner needs. The novelty, and at times uncertainty, of this exploration may be considered too "high risk" or too creative to fit into established funding programs.

Still the investment in such strategic knowledge creation can be leveraged e.g. by using the ***unique, new competence as an entry ticket to prestigious international contracts****.*

We also provide projects that are of a different nature, such as an accomplished project that requires time to be published in a scientific journal or similar. Simply project that leads SAFER forward and ***contributes to the continued development of our joint collaboration platform****.*

- **The pre-studies should proactively stimulate project generation** to maximize the benefits of our multi-disciplinary platform and obtain a broad commitment, both between partners and within research areas.
- Projects should focus on selected areas that help us **meet our vision, our research objectives** and also support the **UN Sustainable Development Goals.**
- All Research areas are active in the process and all partners on level 1 and 2 are welcome to participate in creating project proposals.
- The target level is to carry out 6-8 studies per year.

THE PROCESS IN BRIEF

1. The application form is filled out by the potential project team.
2. The draft application is presented to and discussed in the Reference group with the purpose to improve the application further.
3. The pre-study application is evaluated by the Scientific Council (research area directors and part of the SAFER management team.
4. The project is presented to the SAFER Board, that approves the project and allocate the resources.
5. When approved, the pre-studies follow SAFER's ordinary process for projects "Projektarbetssättet".

The plan is to have four opportunities per year (or until the pre-study budget is used up). The complete schedule for next year will be distributed later on.

FINANCING PRINCIPLES

- The maximum amount to apply for is 100 ksek per project.
- We encourage a high ratio between in-kind and cash contribution. Minimum in-kind is 50%*, there is no maximum in-kind.
- Level 1 and 2 partners are eligible for funding, however, industry partners need to motivate if they apply for cash funding.
- About 600 kSEK per year will be dedicated to pre-studies.
- Part of the cost for the pre-study are to be taken from the SAFER budget and part by the partners involved in the project (or through external funding, or a combination).

** e.g. a project what is approved with 100 ksek cash needs to have 100 ksek inkind, i.e. a total budget of 200 ksek.*

EVALUATION CRITERIA

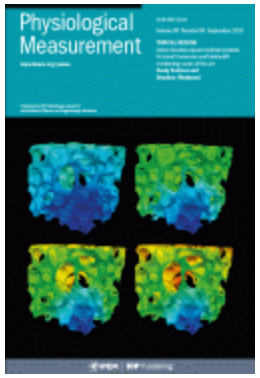
- Support fulfilling SAFER's vision and Vision Zero
- Support SAFER's research objectives
- The project should clearly be a collaboration project with several partners
- Balance between partners (academy/institutes/industry and society)
- Stimulation of partners that currently are not involved in many projects

OTHER REQUIREMENTS

- The result should be presented to the SAFER community and communicated in SAFER's communication channels.
- The project should follow the set project process at SAFER.
  (https://secure.webforum.com/safer/doc/?dfRefID=1444)
- The physical meetings related to the project should be held at SAFER's premises.
- The project should be reported within one year after the project starts.

We want the project to meet **at least one** of the following criteria:

- The results are to be demonstrated through one or more of the connected research resources, e.g. Revere, AstaZero, VTI's simulators or other test beds.
- The seed project / pre-study should generate a larger successful project application.
- The results should be presented in an article that is planned for submission to a prestigious journal or a scientific conference.



TIME PLAN – first call

September: Call opens

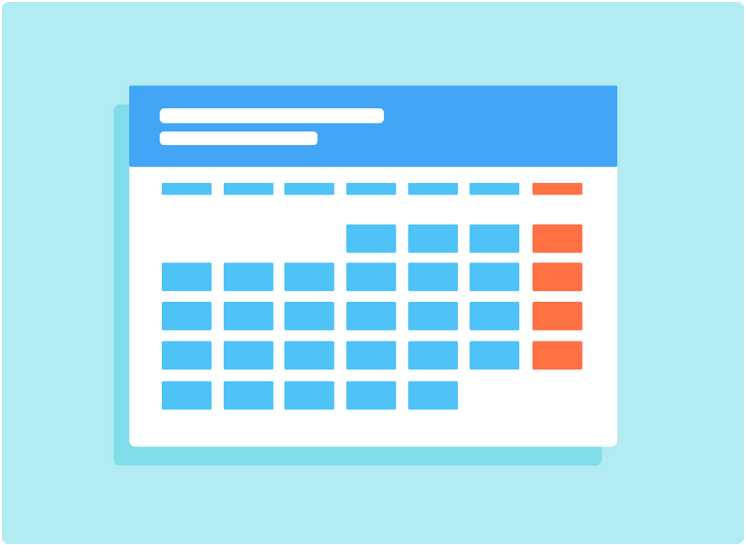
October 16: Final date to send in Draft application to the Research area director

October 23: Discuss the project with the reference group on the Research area day

October 24: The project is being evaluated by the Scientific Council

November 4: The project is being presented to the SAFER Board - decision on the grant

November 5: Decisions communicated to the applicants



VISION AND MISSION

RESEARCH TARGETS

IN FIVE YEARS, 2024, THE ACHIEVEMENTS WILL BE:

- We can evaluate different ways to act in the traffic situation and decide upon how to progress safe and efficiently.
- We have developed a methodology to verify and validate assisted and automated systems in cooperation with international researchers in this area.
- We have developed prediction models for human cognition and behaviour in the areas of "driver engagement", transitions between manual and automatic driving, and interaction between human and ADAS features.
- We have obtained knowledge essential for development of new perception components that enable high-performance, reliable information about the vehicle environment and the driver/riders in the vehicle.

SYSTEMS FOR ACCIDENT PREVENTION AND AUTOMATED DRIVING

RESEARCH TARGETS

IN FIVE YEARS, 2024, THE ACHIEVEMENTS WILL BE:

- We can study road user behaviour in their door to door travels.
- We can monitor the driver state and position during the whole trip in-vehicle in cooperation with Human Body Protection.
- We can diagnose a fit driver based on monitoring data.
- We can insure a safe interaction between automated vehicle and vulnerable road users in cooperation with Systems for Accident prevention and Automated driving.
- We have developed several nudge-based solutions and evaluated them.
- We can define and measure several user experience indicators to contribute to safety.

ROAD USER BEHAVIOUR

RESEARCH TARGETS

IN FIVE YEARS, 2024, THE ACHIEVEMENTS WILL BE:

- An increased understanding on how **shared mobility** and increased variations of sitting postures and activities in passenger cars will influence occupant protection needs.
- Human body models with enhanced **omnidirectional injury prediction capability**, and posture adjustments, capable of serving as an industrial and research tool addressing the needs in the increased automated context.
- Methods to **scale and tune** human body models, accommodating simulation of a variety of humans in a crash, including preceding events.
- An increased understanding of how pre-crash factors and **individual differences** influence injury outcome, by monitoring and quantifying sitting postures and behaviour in vehicles and other road users together with the research area Road User Behaviour.
- **Biomechanical investigations** addressing future challenges which require more in-depth understanding of injury occurrence and tolerances. For car occupants, the **pelvis area** is one key area in which significant steps will be taken.
- Modelling **challenging materials**, e.g. fat tissues and composites.
- Expanding the application of tools and knowledge on road users beyond vehicle occupants, such as **pedestrian in different interactions**, two-wheelers, boards and "wheels on feet".

HUMAN BODY PROTECTION

RESEARCH TARGETS

IN FIVE YEARS, 2024, THE ACHIEVEMENTS WILL BE:

- Identified safety gaps, e.g. long-term injury types.
- Identified critical use cases, e.g. driving a heavy truck in fog among vulnerable road users.
- Identified new critical load cases, e.g. multiple impact car crash.
- Evaluation of implemented safety systems performance, i.e. safety benefit analysis.
- Prediction of safety benefits of new safety systems.
- Prediction of future safety critical scenarios, automation included.
- Determination of required safety level for automated drive.

SAFETY PERFORMANCE EVALUATION