



SWEDISH FOUNDATION *for*
STRATEGIC RESEARCH

2026-10-15

SSF Call for Proposals

SSF Strategic Research Center

Fibre-optic Sensing Enabling Marine Science (SENSE)

The Swedish Foundation for Strategic Research (SSF) announces SEK 70 million in a national call for proposals for a Strategic Research Centre (SRC) that meets the highest international scientific standards. The call aims to stimulate genuine strategic research collaborations between academia, research institutes, industry and society.

SSF intends to fund one (1) SRC in the field of fibre-optic sensing enabling marine science (SRC SENSE). The SRC will receive up to SEK 45+25 million, including overhead costs, over a six-year period. Continued funding will be contingent on a successful mid-term evaluation.

SSF Strategic Research Centers (SRC)

Strategic research is defined as coordinated research in which several scientific competences, each outstanding in its field, come together to address major societal challenges through research and innovation.

A Strategic Research Centre (SRC) should be characterized by high scientific quality and clear potential for long-term industrial and societal impact. Its capacity to generate novel science and technical/clinical solutions through synergistic approaches is an essential feature.

The SRC's research should be based on clear scientific questions and focus on solving important problems or creating new opportunities. The SRC should also present explicit plans for implementation and/or knowledge transfer of research results to industry and society in a long-term perspective. This includes measures to ensure that regulatory and security issues will be addressed.

An SRC should also have a strong presence in international research and innovation initiatives, such as *EU Horizon Europe*, *Digital Europe* and/or *Connecting Europe programs*, and should leverage SSF funding with international funding to strengthen its impact. The potential to become an internationally leading research center is a key evaluation criterion.

Aims and Scope

Fibre-optic cables can be used for sensing their surroundings by attaching dedicated sensors to the cable, either during manufacturing (i.e. SMART) or after deployment, and through Rayleigh scattering or polarization of the light in the fibre. Fibre sensing technology is a rapidly developing field and already a range of parameters can be measured, including strain, pressure, vibration, temperature, twist, electric current and magnetic field. Potential applications include monitoring of climate, maritime and terrestrial traffic, infrastructure, and human health. In addition, the high and unrestricted capacity of modern cables creates major opportunities to improve existing observatory instruments and develop new, highly distributed real-time systems in areas such as geodesy, satellite operations and space research.

The *Polar Connect* cable is a global initiative to establish a high-capacity submarine fibre-optic cable between Northern Europe and East Asia via the Arctic Ocean, the shortest route between the two continents. The cable is designed to support 12 to 24 fibre pairs, enabling ultra-high transmission capacity while bypassing geopolitically sensitive areas such as the Red Sea, through which approximately 90 percent of today's fibre-optic connections between Europe and Asia are routed. *Polar Connect* is projected to be commissioned in the 2030s, subject to the availability of icebreaker capacity for seabed cable-laying operations.

For marine science, the communication cable itself, together with add-on sensors, can provide continuous measurements of the deep ocean. Such data are valuable for climate science, oceanography, seismology, biology and dual-use research. The system could, for example, detect acoustic signals from earthquakes, whales, storms and ships, as well as monitor cable integrity.

While the *Polar Connect* cable will be produced using available commercial technology, the intended sensors require design-driven research breakthroughs in enabling technologies. Examples include sensors for temperature measurements related to ocean heat content and sea-level rise, pressure measurements related to currents, tsunamis and sea level, and acoustic measurements related to ship and whale movements.

A successful SSF SRC SENSE should have the following characteristics:

- It has a team of leading scientists working with sensor research, data management, and marine science.
- It interacts with and makes significant contributions to the scientific challenges of *Polar Connect*.
- The results may have an impact on other water-based or land-based applications, such as power cables, pipelines and railways.
- It ensures secure management of collected data.

Examples of potential research questions in this call include:

- Designing SMART sensors with outstanding resolution, stability, reliability and durability for deep-sea operation over years to decades.
- Developing solutions for integrating sensors with the cable, enabling straightforward replacement or upgrading of sensors and the possibility of adding branches.
- Developing effective optical-to-electrical interfaces for signal amplification.

- Integrating optical fibres into materials and structures.
- Developing distributed acoustic sensing (DAS) and/or state-of-polarisation sensing (SOP).

Major strategic relevance to Sweden may include:

- Digital sovereignty and redundancy.
- Telecommunication.
- Environmental monitoring and modelling.
- Marine biology.
- Seismology and tsunami warning systems.
- Surveillance and other dual-use applications.

A successful proposal needs to include strong partnerships demonstrating credible potential applications of SENSE with major strategic relevance to Sweden.

The research questions listed above are examples intended to stimulate research and innovation and should not be regarded as mandatory research directions. SSF encourages applicants to propose novel research through innovative and strategic collaborations.

Eligibility

Applying organisations: An SRC consists of applicants from one host higher education institution (HEI) and applicants from one to three additional HEIs or research institutes (RIs).

Host: The host is the Swedish HEI that employs the main applicant.

Industrial and/or societal partners: An SRC must be supported by at least two industrial and/or societal partners. These partners should complement one another and address relevant areas in the consortium. Each industrial and/or societal partner may be represented in a maximum of two (2) applications in this call. Applications involving industrial and/or societal partners registered in Sweden will be prioritized. Societal partners may not receive SSF grant funding but are expected to contribute their own resources.

Main applicant (PI/Centre Director): The PI must have international standing as a research leader in their field, be actively employed by the host at least 50 percent full-time employment and be prepared to assume operational responsibility for the SRC throughout the entire grant period.

Co-applicants: Co-applicants are researchers employed at least 50 percent of full-time employment by the collaborating HEIs/RIs, including the host HEI, and who receive part of the grant. The total number of co-applicants should not exceed seven (7), and gender equality must be considered in the composition of the team.

An applicant may be represented either in one application as main applicant and in one application as co-applicant, or in two applications as co-applicant.

Each HEI may be represented by its employees in a maximum of one (1) application as host in this call. There is no limit to the number of applications in which a given HEI or RI may be represented by an employee as co-applicant, i.e. as a non-hosting applying organisation. HEIs and RIs are expected to be selective and to frame their centers strategically.

International research organisations may participate only using their own resources, except for international researchers who become employed by the SRC through the participating Swedish HEIs/RIs.

The SRC must have a Governing Board approved by SSF, with a majority of representatives from industry and/or society. The Board, chaired by a representative from industry or society, shall have the mandate to recommend that SSF terminate funding as a whole or in part, or change the management of the SRC. A proposed Board should be presented in the application.

The SRC must assign an international Scientific Advisory Committee (SAC), proposed in the application.

A provisional Centre Agreement signed by all partners, i.e. societal partners and applying organisations, will be required from the consortium behind the application if it is selected for a hearing. The recommended duration of this agreement is at least three years, *i.e.* until the mid-term evaluation.

Successful applicants should be internationally connected, for example through European Commission initiatives. To strengthen impact, the proposed SRC may also establish collaborations with research fields that complement natural science, engineering and medicine.

Applications that do not comply with the eligibility criteria above will not be considered by SSF. *It is the responsibility of the main applicant to inform all co-applicants, applying organisations and industrial/societal partners, and to ensure that the proposal complies with all requirements before submission.*

Grant

SSF funding is available only to Swedish universities and research institutes, with one HEI serving as the administrative organisation for the grant. Industrial/societal partners and international partners must support the SRC using their own resources.

The proposed SSF budget amounts to up to SEK 70 million in total over six years.

SSF will initially grant SEK 45 million at the start of the SRC. Up to an additional SEK 25 million may be granted by SSF following a mid-term evaluation. Three percent (3%) of the grant will be reserved by SSF to support utilisation and exploitation of the research results, as proposed by the Centre Director.

Universities and research institutes may use the grant for salaries, including senior researchers, postdocs and PhD students, as well as for research tools, infrastructure and running costs according to the needs of the SRC. The application must demonstrate that the SSF grant will be appropriately distributed among the participating HEIs/RIs, including

an adequate budget for each organisation. It must also clearly present any co-funding, such as in-kind contributions, cash, laboratory access or research infrastructure, from industrial/societal partners.

A maximum of 25 percent of the overall grant may be used for salaries for the main applicant (Centre Director) and/or the co-applicants collectively. However, no more than 25 percent of each applicant's individual salary may be covered by the SSF grant. A maximum overhead cost of 25 percent on the direct costs (excluding heavy equipment and consultants) is allowed.

Proposal and submission

A complete application must include, in addition to the information specified in SSF's online application portal, a full description of the SRC research plan and details of the relevant and complementary expertise of each participant.

Each proposal must clearly describe the international state of the art in the research area(s) addressed and explain how the SRC will be scientifically competitive and relevant. In addition, the proposal should clearly state the resources available and outline how the participating organisations will contribute to achieving the SRC's goals. The plan and potential for international cooperation and leverage should be clearly described within the boundaries of national security.

The application should provide a clear account of the strategic significance of the research, including an IPR plan and a plan for utilisation and exploitation of the results in Sweden during the SRC's operation and after its completion.

The application should include a statement describing how the SRC will operate within the framework of Trusted Research, including integrity, transparency and security.

The SRC participants must propose a concise set of long- and short-term Key Performance Indicators (KPIs) on which the SRC can be evaluated at the mid-term evaluation. These indicators must cover scientific, managerial and business qualities, as well as strategic relevance and impact. Each KPI should be elaborated in the research plan and closely linked to the SRC's goals.

The following KPIs are mandatory for all SRCs:

- the number of co-authored publications by the collaborating research groups and partners;
- mobility, measured in person-years, between the collaborating research groups and partners; and
- international presence, for example through grants from the EU and/or other international initiatives, with baseline values stated.

The application must include a sustainability assessment and a risk analysis of the proposed technology, innovation or other output.

The application should provide a clear account of how the applicants currently use, and intend to use, Artificial Intelligence (AI) as a tool in their research.

The application should be prepared jointly by all participating SRC organisations and must be submitted by the Centre Director (main applicant). All participating organisations, including societal partners and applying organisations, must attach Letters of Intent (LoI) signed by the highest management level in the organisation, such as the head of research or equivalent. The vice-chancellor of the host HEI must also sign the application.

The proposal must be written in English and submitted via the SSF online application portal at: <https://strategiska.se/apply>. To obtain a complete overview of all data required for submission, applicants must consult the portal. Applicants should log in well in advance of the deadline and submit the application in good time. When an application is submitted, the system will reject it if any required data fields are missing. Applications may be submitted and resubmitted as needed before the deadline.

Applications must be submitted by March 9, 2027, 14:00 CET. No additional material will be considered after this deadline unless explicitly requested by SSF.

Evaluation

Applications will be assessed by an evaluation committee and a hearing committee comprising national and international experts from industry, academia and research institutes, as well as through international peer review.

The applications will be evaluated using the following criteria:

- Conformity with the scope and eligibility criteria outlined above.
- Scientific quality, including originality, strengths, weaknesses and feasibility of the research plan.
- Degree of internationalisation and potential to constitute an internationally leading research constellation.
- Strategic relevance to Swedish industry and/or society, and clear long-term impact of the proposed research.
- Qualifications of the applicants and composition of the research team, including previous achievements in science, innovation and entrepreneurship, international experience and networks, gender balance, and leadership and management capacity.
- Added value of synergistic approaches and level of engagement from all participating organisations, including *bona fide* Letters of Intent (LoI's).

Timetable

Call announced: October 2026.

Last date for applications: March 9, 2027, 14:00 hours CET

Applications will be evaluated in stages:

- Selection of a maximum of three applications for hearings: April 2027
- Hearings: May 2027
- Decision by the SSF Board: June 22, 2027

- Centre start: from July 1, 2027, and no later than December 31, 2027

Please note that the Foundation is subject to the Principle of Public Access to Official Records (*Offentlighetsprincipen*). Applicants should therefore avoid submitting material that they do not wish to be made public, such as information that could prevent patenting.

Contact people at SSF

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