



**Smartare  
Elektroniksystem**

ELECTRONIC COMPONENTS & SYSTEMS

# Beviljade projekt 2018

**Smartare  
Elektroniksystem**

ELECTRONIC COMPONENTS & SYSTEMS

Ett strategiskt innovationsprogram för att öka konkurrenskraft och tillväxt i svensk industri

# Beviljade projekt 2018

## **Utlysningen för genomförbarhetsstudier som stängde den 6 sep 2018 gav följande utfall:**

Totalt beviljades 9 ansökningar av de 25 som kom in. De 9 projekten delade på 2,8 miljoner kr i bidrag  
Läs mer om alla beviljade projekt här eller på Vinnovas hemsida

Utlysningen Forsknings- och innovationsprojekt som stängde den 8 mars 2018 gav följande utfall:

20 projekt beviljas sammanlagt 57,5 miljoner kronor i bidrag. Dessa projekt har totalt budgetar på 95,2 miljoner kronor. Till ansökningsomgången kom in 47 projektansökningar som tillsammans sökte 131,7 miljoner kronor i bidrag. Läs mer om alla beviljade projekt här. eller på Vinnovas hemsida

The call for pre-studies that closed September 6, 2018 gave the following result:

In total, 9 of the 25 submitted applications were granted funding of totally SEK 2.8 million.

# Beviljade projekt 2018

Following projects were funded in this call:

## **SITARIS – Smart diagnostics based on distributed sensor arrays and image signature recognition**

Project budget 340 000 kronor, granted funding 169 000 kronor

**Partners in project:** KTH, ABB

**Objectives:** Conduct a feasibility study in order to develop a radically new approach to smart diagnostics based on identifying and extracting characteristic signatures from distributed sensor array images.

[Project summary from the coordinator here.](#)

[Slutrapport: Vinnovas portal](#)

---

## **MLW Interconnection and Integration Plattform**

Project budget 800 000 kronor, granted funding 400 000 kronor

**Partners in project:** Chalmers, Ericsson, Metasum

**Objectives:** The goal is to verify two key aspects of the MLW technology for commercial viability; Manufacturability and Ease of integration

[Project summary from the coordinator here.](#)

[Slutrapport: Vinnovas portal](#)

---

## **Demonstration of energy efficient SiC power module with low inductance**

Project budget 966 000 kronor, granted funding 400 000 kronor

**Partners in project:** Asensor Technology, GE Power Sweden, KTH

**Objectives:** The project aim is to demonstrate a cost effective hybrid assembly for power modules that makes considerable higher switch frequencies possible compared to standard modules

[Project summary from the coordinator here.](#)

---

## **Optical fibre pressure sensors with enhanced sensitivity**

Project budget 810 000 kronor, granted funding 400 000 kronor

**Partners in project:** RISE, SKF, Svensk Kärnbränslehantering

**Objectives:** The prestudy will outline technical solutions and commercial prospects for a fibre optic pressure sensor system, adapted for use in industrial settings

[Project summary from the coordinator here.](#)

[Slutrapport: Vinnovas portal](#)

# Beviljade projekt 2018

## IN TEMPO

project budget 600 000 kronor, Granted funding 300 000 kronor

**Partners in project:** Invisense, RISE

**Objectives:** To investigate the possibility of integrating a chipless temperature sensor and developing a positioning system for a unique, highly innovative, chipless, low-cost moisture sensor product. It will prepare for a larger R&D project with the long-term objectives of implementing the temperature sensor and positioning system to enhance the moisture sensor product performance and user efficiency.

[Project summary from the coordinator here.](#)

[Slutrapport: Vinnovas portal](#)

---

## Smart reflex

Project budget 280 000 kronor, granted funding 140 000 kronor

**Partners in project:** RISE, POC Sweden

**Objectives:**

- » To develop a simple proof of concept for a Smart Reflex, based on knowhow in electrochromism and electronics design.
- » To investigate the preconditions regarding materials, system design and integration (into helmet, garments).
- » Initiate the build-up of a consortium for a larger application to Vinnova.

[Project summary from the coordinator here.](#)

[Slutrapport: Projektets egen slutrapport](#)

---

## THz Systems 2025

Project budget 400 000 kronor, granted funding 200 000 kronor

**Partners in project:** Omnisys Instruments

**Objectives:** The goal is to develop new technology for THz systems broaden the use and applications of the THz technology significantly and making it commercially useful outside the traditional scientific markets.

[Project summary from the coordinator here.](#)

[Slutrapport: Vinnovas portal](#)

# Beviljade projekt 2018

## Miniaturized ultrasound technologies for monitoring of components and industrial processes

Project budget 800 000 kronor, Granted funding 400 000 kronor

**Partners in project:** Swerea Kimab, Atlas Copco, Xylem, LTU, RISE

**Objectives:** To use modern micro-ultrasound technology to monitor critical components and thus reduce the risk of unexpected interruptions

[Project summary from coordinator here.](#)

[Slutrapport: Vinnovas portal](#)

## Disruptive Improvement of the World's most Environmentally Friendly Display Technology

Project budget 800 000 kronor, granted funding 400 000 kronor

**Partners in project:** rdot, RISE

**Objectives:** Demonstrate the feasibility of creating a fully printed environmental friendly passive matrix display in large scale

[Project summary from coordinator here.](#)

[Slutrapport: Vinnovas portal](#)

**Utlysningen Forsknings- och innovationsprojekt som stängde 8 mars 2018 gav följande utfall:  
20 projekt beviljas sammanlagt 57,5 miljoner kronor i bidrag.**

## 3D haptic touch ASIC

Projektbudget 8 915 000 kronor, beviljat bidrag 3 990 000 kronor

**Deltagare i projektet:** MyVox AB, ShortLink, LiU, Autoliv

**Mål för projektet:** to develop an ASIC with the following characteristics:

- » Possible to mass produce in IC Foundries (for example AMS Austria, X-Fab-Germany, STM-France, TSMC-Taiwan etc.) at cost of less than 5 USD,
- » Less than 1 mW / channel in total power consumption thereby making possible its use in mobile units.
- » A minimized ASIC form factor of ~50-100 mm<sup>2</sup> (5-7 x8-12 mm) with a thickness of less than 0.3 mm.
- » Allowing both analog and digital Tx/Rx beam forming of 96×96 channels pMUT transducers

[Project summary from coordinator here.](#)

# Beviljade projekt 2018

## Higher-symmetric structures for future 5G communication systems

Projektbudget 5 000 000 kronor, beviljat bidrag 1 924 000 kronor

**Deltagare i projektet:** KTH, Ericsson AB, Sunway, Digital Metal

**Mål för projektet:** Main goal of project is to produce a technological breakthrough based on the concept of higher symmetries for generating highly efficient antenna systems for 5G

[Project summary from coordinator here.](#)

---

## Pilot study for improved traffic safety for emergency vehicles using EVAM transmit technology

Projektbudget 3 549 000 kronor, beviljat bidrag 1 774 000 kronor

**Deltagare i projektet:** H&E Solutions AB, Inission Stockholm AB, Statens väg- och transportforskningsinstitut

**Mål för projektet:** The project aims to clearly investigate and evaluate the value chain and effects of EVAM Transmit to improve road safety for emergency vehicles

[Project summary from coordinator here.](#)

---

## DIGEST: Digitalization of HVDC grids via smart data discovery

Projektbudget 9 165 000 kronor, beviljat bidrag 4 000 000 kronor

**Deltagare i projektet:** ABB AB, Mälardalen University

**Mål för projektet:** To establish a framework of smart data processing to support monitoring and real-time analysis of HVDC grids. This framework will be equipped with new methods and techniques that are capable of:

- » selecting the most discriminative features to describe HVDC cases
- » discovering the most significant HVDC cases to build the smart case base
- » incrementally updating the smart case base in real-time to adapt to varying operation conditions
- » fast identifying the fault (together with the root cause) in real-time by similarity-based reasoning with the smart data

[Project summary from coordinator here.](#)

# Beviljade projekt 2018

## Smart multi-channel charge amplifier for x-ray spectrography

Projektbudget 5 900 000 kronor, beviljat bidrag 2 950 000 kronor

**Deltagare i projektet:** Orexplora AB, Grepit AB, Luleå University of Technology

**Mål för projektet:** Based on the successful feasibility study, design and ASIC for a multi-channel spectrometer for X-Ray spectroscopy, adapted for an analysis machine for mineral samples.

[Läs mer om projektet här.](#)

---

## Connect my body: from in-body communication to the health care system

Projektbudget 3 163 000 kronor, beviljat bidrag 1 486 000 kronor

**Deltagare i projektet:** Box Play Alleato AB, Uppsala University, Akademiska sjukhuset, Intel

**Mål för projektet:** To reliably connect in-body sensor networks to health care systems

[Läs mer om projektet här.](#)

---

## A Digital Pre-Distortion Power Amplifier for the NB-IoT Standard

Projektbudget 6 693 000 kronor, beviljat bidrag 3 347 000 kronor

**Deltagare i projektet:** Xenergetic AB, Lunds Universitet

**Mål för projektet:** Design of a PA (Power Amplifier) with “Digital Predistortion” (DPD). A transceiver will be integrated with a DPD-algorithm developed by Lund University in cooperation with Xenergetic AB. Test-chip will be fabricated and measurements will be conducted in EIT’s electronics lab.

[Project summary from coordinator here.](#)

---

## Millimeter-wave massive MIMO systems with smart beamforming

Projektbudget 4 080 000 kronor, beviljat bidrag 2 040 000 kronor

**Deltagare i projektet:** Lund University, Sony Mobile Communications AB

**Mål för projektet:** Prototyping a millimeter-wave massive multiple-input multiple-output systems with smart beamforming capability for 5th generation new radio.

[Project summary from coordinator here.](#)

# Beviljade projekt 2018

## **INITIATE = InNovative acTive integrATED antennas**

Projektbudget 8 600 000 kronor, beviljat bidrag 4 000 000 kronor

**Deltagare i projektet:** Chalmers, Ericsson AB, Gapwaves AB

**Mål för projektet:** The goal of this project is to improve cost- and energy efficiency of 5G wireless communication transmitters through investigation of novel integrated active antenna concepts.

[Läs mer om projektet här.](#)

---

## **Advanced laser for industrial lithography**

Projektbudget 3 060 000 kronor, beviljat bidrag 1 530 000 kronor

**Deltagare i projektet:** KTH, Mycronic AB, Svenska Laserfabriken AB

**Mål för projektet:** To develop a compact and effective laser for Mycronic AB's lithography system. The prototypes will be evaluated in the systems and be a starting point for productization

[Project summary from coordinator here.](#)

---

## **Development of a nano-plasmonic fiber optic sensing platform for battery monitoring**

Projektbudget 3 402 000 kronor, beviljat bidrag 1 701 000 kronor

**Deltagare i projektet:** Insplorion, RISE Acreo

**Mål för projektet:** To design, develop, and evaluate a low-cost, robust and efficient sensor system based on a fiber

[Läs mer om projektet här.](#)

---

## **Digital receivers that are extremely wideband**

Projektbudget 5 736 000 kronor, beviljat bidrag 2 500 000 kronor

**Deltagare i projektet:** Saab AB, Ericsson AB, Lund University

**Mål för projektet:** To design and demonstrate fully integrated extremely wideband digital receivers that will pave the way for future electronic warfare as well as mobile network products

[Project summary from coordinator here.](#)



# Beviljade projekt 2018

## Open ROADM-solution in Swedish metro/regional environment

Projektbudget 11 170 000 kronor, beviljat bidrag 4 000 000 kronor

**Deltagare i projektet:** Smartoptics AB, RISE Acreo AB, Telia, IP-Only

### Mål för projektet:

- » Create a forum in Sweden regarding open disaggregated optical networks consisting of operators, suppliers and research institutes.
- » Develop an open fiberoptic system solution with ROADMs for customers who intend to develop SDN-Controllers or buy Controllers externally.
- » Develop or customize an existing SDN-Controller which will allow for configuration and monitoring of the ROADM-network.
- » Develop Controller applications: A number of attractive applications in the SDNController that facilitate operation and maintenance of the optical networks.

[Läs mer om projektet här.](#)

---

## Integrated LIDAR system platform for gas profiling in combustion and industrial processes

Projektbudget 5 676 000 kronor, beviljat bidrag 2 738 000 kronor

**Deltagare i projektet:** NEOLund AB, Lund Universitet, RISE, Vattenfall

**Mål för projektet:** The objective is to develop a sensor technology platform based on the new Scheimpflug LIDAR concept, for profiling and monitoring of combustion and industrial processes.

[Läs mer om projektet här.](#)

---

## Self-predicting and inter-communicating electric drives for industrial process optimization

Projektbudget 6 100 000 kronor, beviljat bidrag 2 918 000 kronor

**Deltagare i projektet:** KTH, ABB AB, Ericsson AB, Imagimob AB, LumenRadio AB

**Mål för projektet:** Proof of concept of a new way of achieving industrial process reliability, flexibility and optimization through smart electric drives forming an edge cloud. In this cloud, local self-monitoring and health prediction of electric machines and drives is implemented, through improved hardware, artificial intelligence and direct inter-drive communication

# Beviljade projekt 2018

## Smart multifunctional glass

Projektbudget 8 000 000 kronor, beviljat bidrag 4 000 000 kronor

**Deltagare i projektet:** RISE AB, RISE Acreo AB, ChromoGenics AB, Inwido Sverige AB, Hancap AB, Solibro Research AB, Vasakronan AB, Volvo PV AB

**Mål för projektet:** To develop smart multifunctional glass applications with an integrated electronic control system through industry-wide collaboration, including tests and evaluations in real-world environments

[Läs mer om projektet här.](#)

---

## 5G mmwave RFIC antenna in package for customer premises equipment (CPE) and gigabit fixed access (FWA)

Projektbudget 18 200 000 kronor, beviljat bidrag 3 991 000 kronor

**Deltagare i projektet:** Sivers IMA AB, Uppsala University

**Mål för projektet:** Develop a 5G RFIC using in-packaged antenna for customer premises equipment. This solution will be used for FWA with the 5th generation mobile networks. The solution shall be a low cost RFIC using a packaging technology that secure an in-packaged antenna technology for the 5G mass-market providing high speed wireless data to the home also called FWA

[Läs mer om projektet här.](#)

---

## 140 GHz micromachined gap waveguide-based LOS MIMO antenna array

Projektbudget 8 200 000 kronor, beviljat bidrag 4 000 000 kronor

**Deltagare i projektet:** Chalmers, Ericsson AB, RISE Acreo AB, Gapwaves AB, Mercene Labs AB

**Mål för projektet:** To realize wideband and high gain MIMO antenna module for 140 GHz which will be fabricated by low cost MEMS technology for use in backhauling links.

[Läs mer om projektet här.](#)

# Beviljade projekt 2018

## **Water alarm label – "thin film detector"**

Projektbudget 4 066 000 kronor, beviljat bidrag 2 033 000 kronor

**Deltagare i projektet:** Tollco AB, RISE Acreo AB

**Mål för projektet:** Develop a wireless water alarm label. The production and product costs must be low. The label is produced/assembled in Sweden and benefits Swedish industry. With support from Swedish research, ensure the end users' need to protect their home against water damage. Practically implement the theoretical result from the feasibility study.

[Läs mer om projektet här.](#)

---