

# Norwegian Centres of Expertise



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## NCE Microsystems

**NCE Microsystems is the result of a long-term commitment to microtechnology in the region of Vestfold. The companies in the cluster comprise the most important commercial arena for microsystems technology in Norway, and play a leading role in the Norwegian electronics and ICT fields.**

Most of the companies in the cluster are international leaders in their product areas – marketing and selling their products to major, demanding international customers.

### Background

Miniaturisation in electronics is a key trend throughout the ICT sector and continues to develop at a rapid pace. To increase packing density and performance, research is being conducted internationally in several new technology areas related to integration and interconnection in three dimensions. This will require completely new technologies for use in product development, construction and assembly.

The anticipated impact of this trend may be so vast that, in the long run, it could threaten the very basis of electronics production in Norway. If the Norwegian electronics industry is to keep pace with these developments, efforts to enhance expertise in this area must be implemented. It is essential to establish laboratories that are adequately equipped to conduct experiments and produce test products and prototypes.

With new technology comes the potential to establish new companies. These companies will need to be internationally oriented as they will not have a domestic market. Developing a new technology company takes time, typically requiring a minimum of ten years. Achieving profitable turnover on a new product usually takes at least five years. This means that all activities must be planned in

a long-term perspective. Newly established companies will benefit greatly from the cluster's wide-ranging international experience.

### Measures and projects

The projects carried out by NCE Microsystems are grouped around the following main areas of activity:

#### Further develop the existing network

The focus here is on efforts to continue and strengthen the Electronic Coast (EC) network, coordinate use of infrastructure within the cluster, and achieve a higher national and international profile for the cluster as a whole.

#### Increase product development as a basis for commercialisation

NCE Microsystems will initiate and promote the development of products on the basis of new ideas generated by national and international R&D networks and existing companies.

#### Increase technology activities and R&D within cluster companies

Implement funding of start-up activities related to the assessment and introduction of new technology.

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Develop targeted technology initiatives between the companies and R&D actors. Initiate R&D activities that involve doctoral and master's degree students.

#### **Implement trend analyses and strategic processes**

Compile information about international trends and research in the area of micro- and nanotechnology (MNT). Identify new market opportunities in which new MNT can be used as a basis for innovative products by means of team work that draws on the cutting-edge expertise found in the R&D community. Identify ways in which existing products can be refined by applying new micro- and nanotechnology.

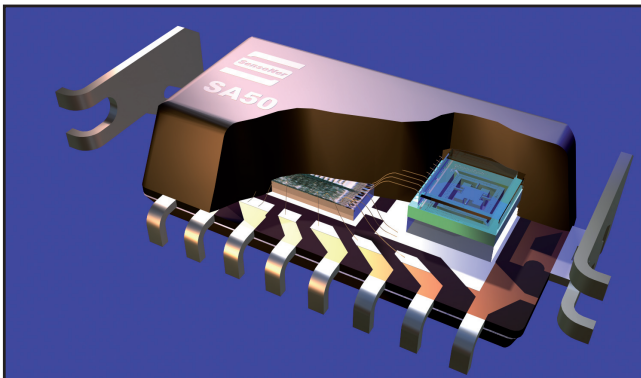
#### **Establish new study programmes, a research centre and infrastructure**

The study programme in microsystems technology at Vestfold University College will be expanded to include doctoral level courses. The object is to enable Vestfold University College to become accredited to confer doctoral degrees. The courses will be developed in cooperation with the University of Oslo. Based on the greatest needs within the companies, efforts will be made to establish new, advanced laboratories with state-of-the-art scientific equipment for use as a shared resource within the cluster.

#### **Strategy and objective**

The overall objective of NCE Microsystems is to promote the growth and renewal of the companies within the cluster and to establish new companies with international potential. A dynamic MNT community will be cultivated so that internationally leading companies with international ownership will choose this region in which to develop and grow. A viable, well-coordinated regional innovation system will also be developed to ensure commercialisation and future value creation that will continue after the NCE project has been concluded.

The microtechnology companies in the cluster will benefit from increased sales and better utilisation of new solutions in miniaturisation and the application of microsystems technology. NCE Microsystems seeks to promote the development of new start-up companies and create more jobs within the cluster. Efforts will also be made to obtain funding for various projects from the EU, the Research Council of Norway, Innovation Norway, the European Space Agency and other funding sources.



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