

June, 2007

Nokia Research Center

Nokia Research Center, founded in 1986, is Nokia's corporate research unit of about 800 employees.

Nokia Research Center's mission is to renew Nokia through strategic and long-term research. "Renew" means thinking beyond where the rest of the company is thinking, thinking differently from the rest of the company and having the responsibility to refresh and reinvent the company.

Building on the Very Human Technology, Nokia Research Center's vision is Become the global leader of open innovation for human mobility systems of the fused physical and digital world, giving birth to the growth of businesses for Nokia.

Though Nokia Research Center has been conducting research for 20 years at Nokia, this does not mean that it has settled into a routine way of working. Today, Nokia Research Center is very much a living organization, always ready to renew itself and blaze new trails. Nokia Research Center has been transforming itself in many ways - today the organization reflects dual approach to innovation to seek core technology breakthroughs and identify new business opportunities through exploratory systems research.

Nokia Research Center has nine sites in six countries: Finland (headquarters), China, Germany, Japan, UK and USA.

Nokia Research Center cooperates with many leading academic institutions and other technology companies in many research projects. Nokia works with approximately 100 universities globally.

- In May 2007, Nokia Research Center and Tsinghua University, China, announced the establishment of a research framework and a facility dedicated to long term joint research programs. The agreement is the first of its kind in Asia for Nokia Research Center. Tsinghua's professors and students will collaborate with Nokia researchers on a wide range of topics; some global, others focused specifically on Asia.
- In May 2007, Nokia Research Center and the Tampere University of Technology (TUT), Finland, announced the creation of a new framework to tighten open and innovative collaboration in their research activities. TUT will become the first and central collaboration partner in the planned Nokia Innovation Center Tampere, Finland, opening later in the year. The aim of the center is to create a model for research based on open innovation, where information flows freely between collaborators.
- In March 2007, Nokia Research Center and the Helsinki University of Technology, Finland, announced an agreement to work together on a key strategic collaboration in nanotechnology research. The two organisations will work together on selecting and progressing research into this exciting area of technology. Nokia Research Center will base a number of its researchers at the university's premises in Otaniemi, Espoo, for the duration of these projects. The collaboration is also part of The Finnish national FinNano program of TEKES (the Finnish Funding Agency for Technology and Innovation).
- In March 2007, Nokia Research Center and the University of Cambridge, UK, announced an agreement to work together on an extensive and long term programme of joint research projects. Nokia Research Center will establish a research facility at the University's West Cambridge site and will collaborate with several departments – initially the Nanoscience Centre and Electrical Division of the Engineering Department – on projects that, to begin with, will be centred on nanotechnology.
- In November 2006, Nokia Research Center opened a facility located in the heart of Silicon Valley, Palo Alto. Further, Nokia also announced a three-year agreement with Stanford University to develop joint research projects on collaborative mobile computing and applications. As part of the

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agreement, Nokia and Stanford will focus on joint research activities that will incorporate new project-oriented courses on mobile computing and services. Given their close proximity, researchers from Nokia and Stanford will work together using the Stanford campus community as an experimental testing ground for new technologies and services developed by Nokia Research Center.

- In April 2006, Nokia Research Center and the Massachusetts Institute of Technology, Computer Science and Artificial Intelligence laboratory (CSAIL), opened the Nokia Research Center Cambridge, MA, USA, to foster more open innovation with the research community with the goal of advancing the state-of-the-art in mobile technologies. Currently Nokia Research Center is expanding this mode of working in Silicon Valley, as well as looking into other innovation hotspots worldwide.

Nokia Research Center also represents Nokia in many standardization bodies and large international cooperation projects, such as the European Union Framework programs and EUREKA clusters ITEA (embedded systems) and CELTIC (telecommunications). Nokia Research Center representative also currently chairs WWRF (Wireless World Research Forum), a forum formulating visions on research strategies in the communications industry. In the European 6th Framework Program, Nokia leads the MobiLife research program on user driven communications solutions for the future. MobiLife is part of the Wireless World Initiative, group of projects, involving about 100 organizations and being born from WWRF.

One of the main targets of Nokia Research Center is to create IPR (Intellectual Property Rights) for Nokia. In this the unit has been very successful, with about half of Nokia essential patents originating from Nokia Research Center.

- 1672 Nokia Research Center based Invention Reports in 2006 - 34% of all Nokia invention reports
- A total of 616 new patent filing decisions were made from NRC, which is nearly half of Nokia filing decisions

<http://www.nokia.com/research>
<http://research.nokia.com/>

Nokia Research Center (NRC) looks beyond Nokia's existing businesses and product development to challenge current strategies and to stimulate renewal in the company's direction. Working closely with all Nokia business groups and Technology Platforms, NRC's research explores new frontiers in digital services, physical-digital connections, human interaction, data and content technologies, device architecture, and access and connectivity. NRC promotes open innovation by working on research projects in collaboration with universities and research institutes around the world. Nokia Research Center employs around 800 people based in Finland, USA, China, Germany, Japan and the UK. For more information on Nokia Research Center, see our website: <http://research.nokia.com>

Key figures on R&D in Nokia*

Global network with R&D centers in 11 countries.

Over 21,453 people in R&D

This represents 31% of Nokia's total workforce.

Nokia's R&D expenditure totaled EUR 3.9 billion, or 9.5% of net sales.

* Nokia, December 2006