Sendai Cyber Forest Cluster

Sendai Area (Fiscal Year 2002-2006)

Life Sciences IT Environment Nanotech/Materials

Realizing a high-level welfare society by forming a network of clusters, based on technological innovation in the intelligent electronics field

Core Organization Intelligent Cosmos Research Institute Co., Ltd.

Participating Research Organizations (Bold: Core Research Organization)

Industry…ADVANTEST Corporation, Cyber Solutions Inc., Nippon Telegraph and Telephone East Corporation, FUDOKI Co., Ltd., NEC Engineering Ltd., KEPCO the Kansai Electric Power Co., Inc., Device Co., Ltd., YAMATAKE Corporation, JCI Inc., I.T. Research Co., Ltd., IRIS OHYAMA Inc., DSS Inc., SUZUKEN CO., LTD., NEC TOKIN Corporation, Tsuken Electric Ind. Co., Ltd., Oi Electric Co., Ltd., RION Co., Ltd., MEMS CORE Corporation, ZEON Corporation, JRC Nihon Musen Co., Ltd., Pioneer System Technology Inc.

Academia…**Tohoku University,** Tohoku Institute of Technology, Tohoku Gakuin University, Sendai National College of Technology, Ritsumeikan University, Hirosaki University, Miyagi National College of Technology, Kumamoto University

Project Overview

This project aims to realize a technological innovation cluster which will be an international model by leveraging the strengths of the Sendai Area, which is home to the world's top-level research results in the core electronics technology fields of optical communications and semiconductors achieved at research facilities concentrated in the area, including Tohoku University. This is achieved by forming an industry core centering on key technologies (information technology, semiconductors, materials, and manufacturing technology) and linking with various other projects in the area, such as the SENDAI-FINLAND Wellbeing Center Project.

For joint research projects between universities and businesses, we set the following 11 themes: Next-generation Photonics, Next-generation Wireless Technology, Intelligent Network Security Management, Intelligent Communication Interfaces, Intelligent Monitoring, Intelligent Universal Communication, Next-generation Micro Systems, Next-generation Circuit Systems, Intelligent Semiconductor Processes, Intelligent Multi-Band Antennas, and Intelligent Analyzers. Ensuring that these research efforts would be competitive and satisfy the market, we developed and marketed many cutting-edge products, such as stabilized lasers that lay the foundation for next-generation ultra high-speed optical communication and universal speech communication systems using new piezoelectric bone-conduction vibrators that can play higher-pitched tones.

Main Results

1. Sendai Cyber Forest Cluster

The aim of this project was to create an intelligent electronics cluster based on the Cyber Forest vision. To achieve a high-level welfare society, we ensured that achievements in health, welfare and medical solutions using ICTs, system-oriented network security technology, intelligent monitoring technology, MEMS technology and so forth would lead to the second stage of the Knowledge Cluster Initiative.

2. Commercialization of network security management systems

We developed technology for the real-time tracking of unauthorized access and commercialized network security management systems. Since these systems enable stable network administration, they are in growing demand by companies and government offices all over Japan.

3. Commercialization of a traffic diagram research/management system

We commercialized a traffic diagram research and management system that estimates people's pathways by using small autonomous mobile sensors, maps the pathways on a layout plan, and analyzes data to survey and manage people's traffic lines. As the system does not require the installation of an antenna in buildings, it can be used indoors or elsewhere where GPS radio waves cannot reach, which allows easier and lower-cost research, and is expected to create a new market.