Meeting Our CSR Commitments

SPECIAL FEATURE 1

ICT to Realize a Safe and Comfortable Society

With the Mid-term Business Plan 2016, which ends in fiscal 2016, our management policy is to realize sustainable growth through continuous investment by securing stable profitability, as part of our effort to become a high-value added creation group, contributing to the realization of safe and comfortable society. Here, we would like to introduce the OKI Group approach from the view of Information Communication Technology (ICT) that contributes to the realization of a safe and comfortable society.

To achieve the sustainable growth incorporated in the management policy of the Mid-term Business Plan 2016, the defining point of us in the OKI Group is to launch from the core predominance we have cultivated up to now, so that we can maximize business opportunities by opening up new markets based on the shift in business environment. While expanding business and supporting asset-free management through maintenance, EMS and cloud services in global markets for mechatronics and printer businesses, we at OKI Group will make the realization of a safe and comfortable society, which is an integral part of the social infrastructure field for the next generation, a pillar for underpinning and achieving sustained growth.

Therefore, we will offer safer and more comfortable products and services to our domestic customers, starting with those in the financial, telecommunication and public sectors, as well as customers in global markets. In addition, we will roll out high added value products that make the most of the technical forte we have built up over the years, in order to further contribute to the realization of safe and comfortable society.

Market Changes as We Strive for Realization of a Safe and Comfortable Society

In the "Smart Japan ICT Strategy" announced by the Ministry of Internal Affairs and Communications (MIC) in May 2014, as part of the ICT growth strategy vision, ideas are put forward for the creation of new innovation by utilizing ICT to connect various commodities and services. This strategy also reveals ideas for priority projects in which ICT smart towns are developed to encourage local revitalization as well as solve social issues in areas like medical care, education, disaster prevention, transportation, female participation in society and aging infrastructures. Moreover, the strategy includes ideas for developing and maintaining an ICT environment for the Tokyo Olympics and Paralympics in 2020. In other words, this is the government's initiative for the realization of safe and comfortable society.

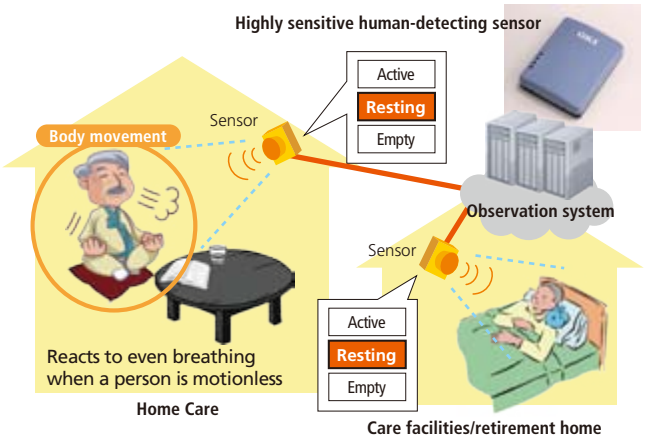
Thus, in acknowledging the arrival of the "Internet of Things" (IoT), where, in terms of technology, new value can be created by linking a diverse range of things to the internet to mutually spread information, the structuring of a Machine to Machine (M2M) environment that makes possible information exchange between "things" is already on the move to become part of tomorrow's world. In line with this, there also is an enormous amount of information collected and stored on clouds by a variety of sensors that is being analyzed and processed as big data, which, more and more, is being put to practical use in cyber-physical systems (CPS) to influence activities in the real world (physical) while its use via social systems such as smart grids and transport systems means that it is beginning to influence corporate and social activities.

OKI Group Approach

We are developing products and technology that make use of preeminence in areas such as sensing technology and short range wireless network technology as part of our effort for the realization of a safe and comfortable society.

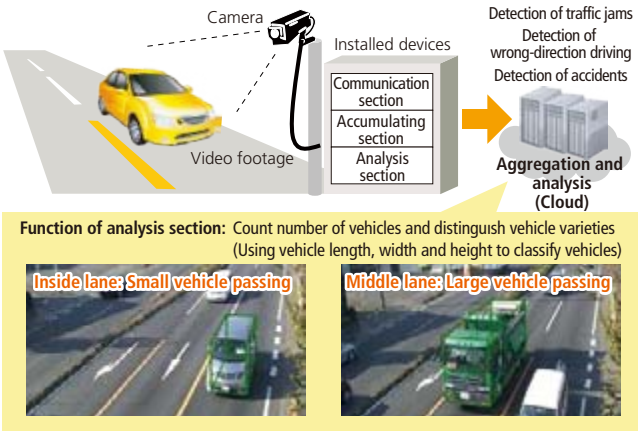
Making Use of Sensing Technology

We at OKI are striving to create ultra-sensitive human-detecting sensor products that use radio waves to detect all sorts of motions from big ones like walking through to small ones like breathing. With such products, systems can be developed to provide detailed observation of the elderly and anyone else who needs caring for, as such products will enable real-time recognition of changes in physical condition and lifestyle rhythm of people, even if they are at rest in bed.



Example of how observation can be performed using ultra-sensitive human-detecting sensors

Again, making full use of video recognition technology, traffic flow analysis systems could be enhanced by street-mounted cameras supplying information on traffic volume and vehicle distinction, such as small and large classification. The expectation for such recognition technology is building as it is able to detect traffic jams, spilled cargo, vehicles driving up the wrong side of highways and accidents.



Traffic flow analysis system using video sensing

Making Use of Short Range Wireless Network Technology

On the back of the reforms to the Radio Law in Japan, there is mounting expectation for 920MHz band short range wireless systems ascribed to smart meters and sensor networks. Compared to the 2.4GHz band used mostly in LAN, the 920MHz band's reachability is higher and further as well as being able to go around obstacles to reach destinations, so it is favored for use outdoors or at sites with lots of obstacles, like factories and hospitals. This frequency band is a sub-GHz one that is getting more and more popular internationally as the frequency band for smart cities. This popularity is expected to stimulate the market.

920MHz band wireless multi-hop unit(Master unit/Slave units)

OKI is commercializing a 920MHz band wireless multi-hop network system that makes full use of our highly reliable multi-hop wireless network technology*. Being able to combine data collection and analysis, this network system offers various solutions for systems such as energy management systems (as it can recognize in real time the amount of electricity, gas and water being used in a building) and for systems that monitor deterioration in structures that are integral to social infrastructures, like bridges and tunnels.

* Wireless multi-hop network technology: This is technology for transferring data via multiple wireless communication devices, rather like a bucket-relay system. As the system can be configured of a single master unit and multiple slave units, an inexpensive wireless network with a broad operating area can be built. In addition, channels are chosen automatically for signaling, so it is good against interference and offers excellent reliability.

From here on, we in the OKI Group will continue to combine and improve these potent technologies we possess, in order to develop our niche in the field of next-generation social infrastructures, such as those for disaster defense/disaster mitigation, social infrastructure maintenance management and next-generation traffic systems. And, in addition, we will use ICT to solve various social issues to keep up work for the realization of safe and comfortable society.

920MHz Band Wireless Multi-hop Network Application Example: River Monitoring System

In recent years, an increasing number of rivers are unpredictably bursting their banks due to abnormal weather such as localized heavy rain or unseasonal downpours, which are outside of past patterns and cannot be foreseen. Most of the major rivers in the Class A river system controlled by the government are installed with water-level monitoring equipment, but the more numerous medium sized and small rivers of the Class B river system are far less well equipped, so evacuation guidance prior to flooding has become an issue. Furthermore, even when equipment is installed, monitoring staff must go to the river concerned to collect data, which hampers real-time decision making.

We at OKI latched onto these issues, and developed a river monitoring system that incorporates 920MHz band wireless multi-hop network technology. This system involves the data of various sensors (rain gauges, water level indicators, etc.) installed at observation points along the river concerned being sent by wireless signal to a monitoring center, where that data is cyclically collected and checked to confirm river status in real-time. Thanks to the use of multi-hop wireless network technology, which enables the signal to hop along a number of wireless signal devices, even if communication channels are broken, the system is able to promptly and automatically reselect a channel and reconfigure the network to ensure collection of data without any missing data. And, as the monitoring center obtains data from all locations in real-time, areas under threat of flood damage and their situations can be grasped, information passed on quicker than normally to the nearby residents, and actions taken to evacuate or counter flooding.

Water level indicator for measuring water at an observation point

An all-weather 920MHz band wireless box installed on an existing outdoor loudspeaker system

TOPICS

Strengthening Our Maintenance Support Setup for Social Infrastructure Systems

In April 2014, we at OKI set up a call center for social infrastructure systems to provide a one-stop service that handles calls from usage inquiries through to recovery work at times of breakdown for the systems we supply to social infrastructure systems such as firefighting command/wireless systems, municipal disaster prevention systems and road management systems. The call center is operated 24 hours a day, 365 days of the year by OKI Customer Adtech, the support service company in the OKI Group.

To constantly assure safe operation of social infrastructures that are continually evolving, it is important to swiftly discover the problem and quickly rectify it using high-level specialist knowledge and maintenance technology. Our call center is staffed round the clock by well versed, full-time technicians. Moreover, the center has an ample service menu, with services like M2M technology that enables automatic messaging to the call center about breakdowns of machines offered in the "machine breakdown auto alert service". The center also offers well rounded measures for risks accompanying disasters and security, such as quake-resistant buildings, system duplication and security management based on ISO27001.