



Korea Water Resources Corporation

K-water works with GE to realize the optimal solution for the global water industry, providing the highest efficiency and quality





Since its establishment in 1967,

The Korea Water Resources Corporation (K-water) has worked toward more efficient development and management of Korea's water resources.

To that end, they are continuing the aggressive pursuit of change and innovation in water management practices as the next big step towards becoming "a global water environment specialist."



K-water started a journey with GE to develop a centralized and integrated water solution for all over the world as Water-K, an OEM brand name for GE Digital's iFIX HMI/SCADA for the automation of water supply facilities and the standardization of water treatment process, and K-water renamed it as iWater and exports to the companies in the water industry across all over the world.

K-water has managed **56 water control facilities** including 20 multi-purpose dams, 16 multifunctional weirs, and the Nakdong River Estuary Bank, to provide a clean and stable water supply. In addition, K-water has built 48 wide-area and industrial water supply facilities with a daily supply capacity of 17.6 million m³ and currently supplies drinking water to 22.3 million Koreans.

K-water has been entrusted to operate the water supply systems for 23 local governments, starting with Nonsan and most recently Cheongseong by using iWater.

K-water supplies industrial water of various quality of levels, customized to the needs of customers, and is becoming Korea's leading supplier of water for industrial purposes thanks to the development of high-efficiency, low-cost water treatment process and the optimized automation and centralized integration of its data by using our system.

Lastly, K-water treats 12.8 million m³ of sewage per day to improve the water quality of streams and enhance public hygiene, thereby creating a better living environment. K-water is managing the entire country by dividing into 3 regions along with the rivers such as Hangang River Regional Head office, Nakdonggang River Regional Head office and Geumgang, Yeongsangang & Seomjingang Rivers Regional Head office. By using iWater, K-water has moved beyond

the simple management and utilization of water and achieved integrated water resources management of these regions' water supply systems and local water supply system throughout the entire South Korea by applying ICT to the management of water quality and ecology. Thereby it allows equal distribution of the benefits of water to everyone, everywhere.

Success of the integrated water management system is the key to national water safety and public water welfare. K-water promises to provide healthy water circulation for all to protect citizens from disasters such as flood and drought and ensure greater happiness through the sharing of water.

The company is working tirelessly to develop and manage water resources in an environmentally friendly and efficient way.

- Drinking water for 22.3 million Koreans
- 56 water control facilities
- 20 multi-purpose dams
- 16 multifunctional weirs
- 48 wide-area & industrial water supply facilities
- Daily drinking water supply of 17.6 million m³
- Daily sewage of 12.8 million m³
- 23 local governments





Their goals include:

- To promote the integrated management of water-related facilities
- To establish seamless flood control and irrigation systems by leveraging information technology
- To produce and supply the world's safest and best tasting tap water
- To further expand into international water markets
- To increase their social responsibilities as a government-run company



Long-Term Partnership with GE

To fulfill their goal of being a global company specializing in water resources, K-water wanted to find the best business partner for a specialized software application to offer as an OEM solution in the water industry.

“When we selected the software for the water system, we considered who had the largest number of installations and who had the best reputation in the water industry throughout the world,” explained the IT Manager for K-water’s Water Supply Division.

K-water determined that they needed specialized software to eliminate the concern for water-related disasters and environmental issues while also promoting the fair distribution of benefits from clean, safe water.

“GE has provided stable and sustainable solutions for many years without any defects for K-water,” Water Resources Management Division Manager said.

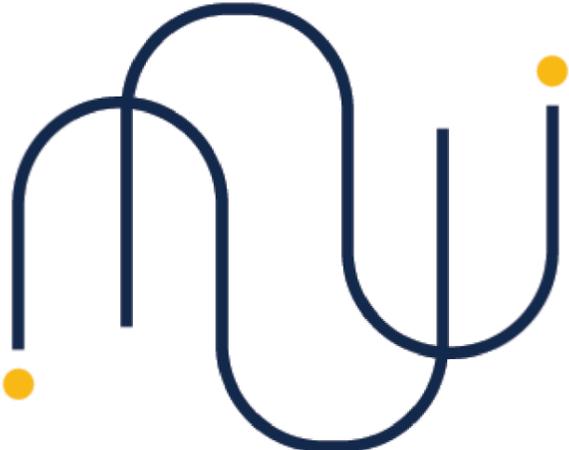
In the result of the company’s effort to develop and manage water resources in an environmentally friendly and efficient way, K-water’s integrated water management system, iWater, is widely used not only in Korea but also in other countries such as Algeria, Indonesia and Thailand.

K-water is taking the experiences and wisdom built up over the past 50 years as a precious resource. K-water will take the lead in solving the water issues, which are urgent matters in Asia and around the world.

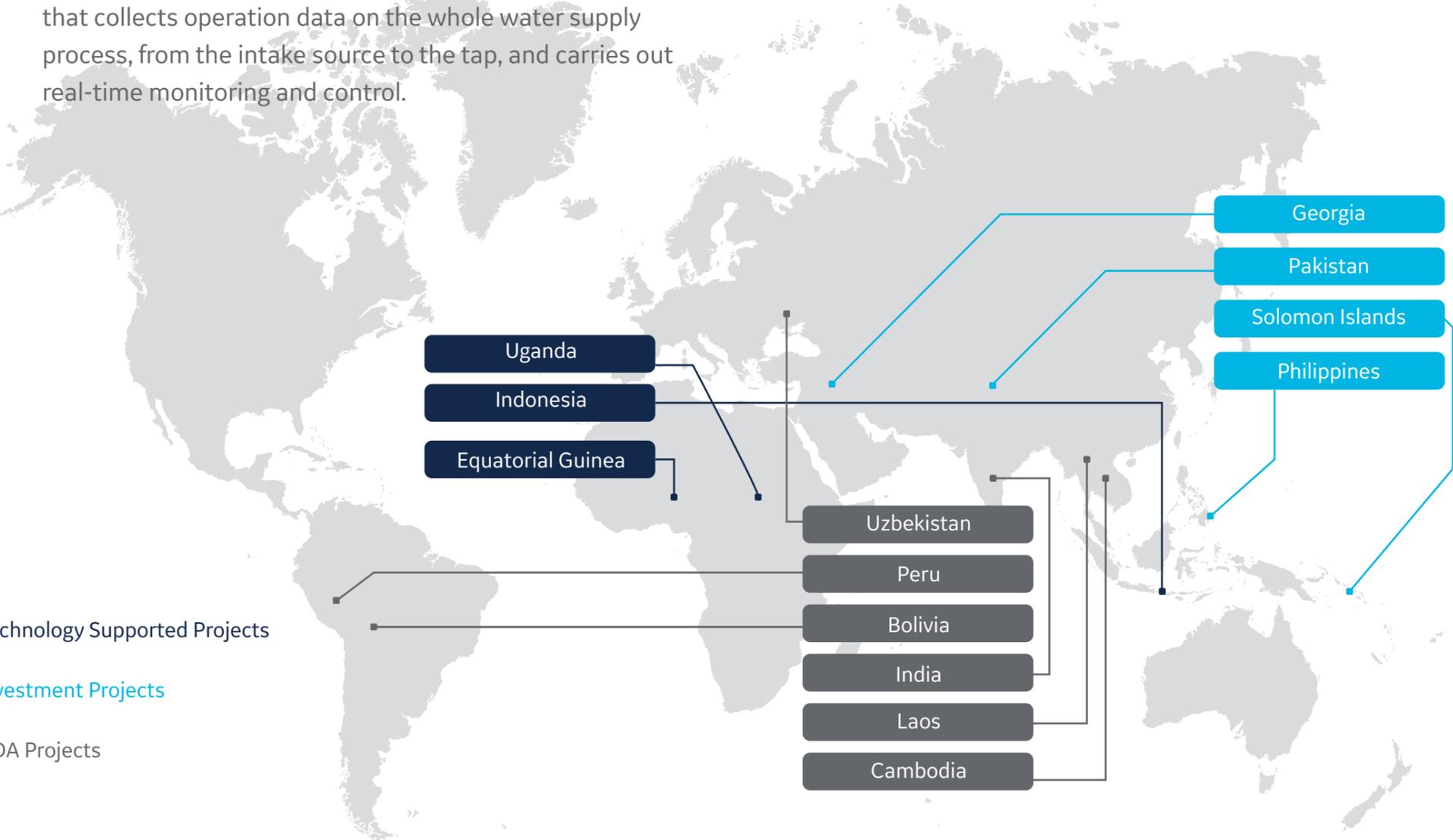
Integrated Water Monitoring System

Considering all factors influencing water management in each basin, K-water carries out water resources management through the integration and intelligent management of water quantity, quality, ecology and environment, which were previously managed separately.

K-water, as Korea’s only organization with the capability to deal with all fields of water resource surveys, including surveys of sluices, basins and groundwater, provides to the public all water-related data collected in real-time through iFIX as its main HMI/SCADA system for iWater, as the company’s water resource management system. Also, the company is building an intelligent water operation system that collects operation data on the whole water supply process, from the intake source to the tap, and carries out real-time monitoring and control.



- Technology Supported Projects
- Investment Projects
- ODA Projects

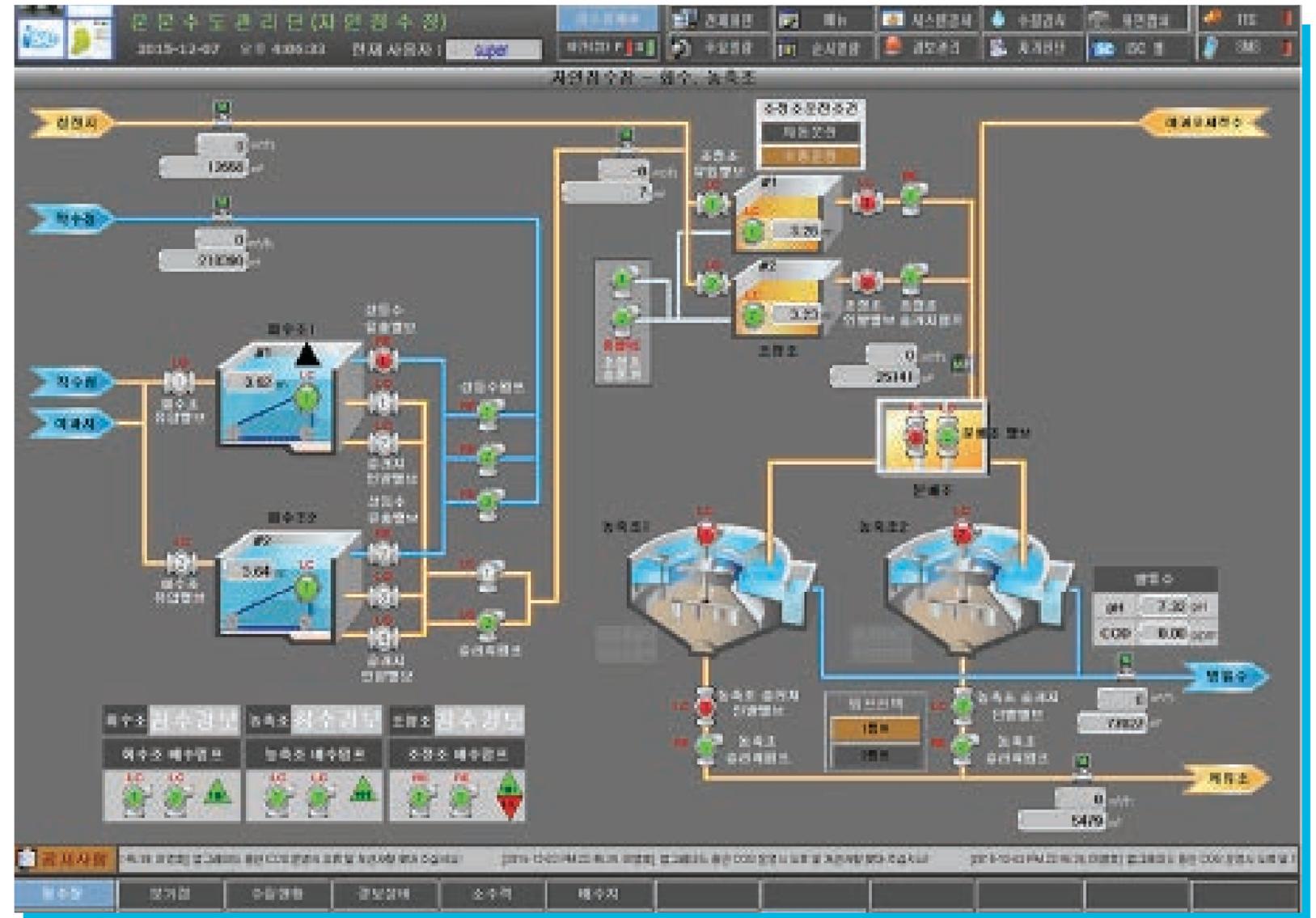


iFIX is part of the Proficy family of automation software products, a single intelligent production solution that works with existing multi-vendor hardware and software solutions to gather and analyze data. Solutions can connect to equipment across the entire physical enterprise to deliver both on-line monitoring for rapid operational response as well as collect historical data as the foundation for continuous improvement. So, K-water can implement many other useful programs by using the third-party interface of iFIX.

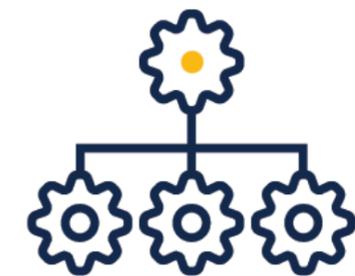
“Compared to other HMI, it is possible to operate a wide range of operations from the perspective of the operator and system integrator. iFIX provides a friendly development environment for the engineer so that we can easily customize and use it. It supports various interfaces such as VB Script, .NET API, Dynamo functions and AlarmQ functions so that we can develop complex requirements of operating personnel,” Hong Jintaek, System Integrator developer for K-water, said.

iFIX offers canned functionality to drill into tag details, instantly trend variables, view enterprise data through hosted portal displays and deliver thin client connectivity to SCADA nodes through terminal services. Graphic tools deliver a variety of drawing productivity tools and advanced capabilities for 3D piping and connected object management.

“iFIX supports Standard Dynamos. Using Dynamos, various objects such as pumps, valves, and tanks used in K-water are developed in the form of a ‘standard dynamo’ and delivered to operator and developer to design the screens based on this. Even though many people design various screens, it looks like one person designed them because of Standard Dynamos. The biggest advantage is that operators can work without a hand-over even if the workplace is changed,” Hong Jintaek, System Integrator developer for K-water said.



iFIX is ideal for use in Water/Wastewater facilities and is installed in some of the largest plants around the world. And, Proficy is a proof point of GE’s lean strategy by delivering a customer solution that simultaneously improves a customer’s operating and environmental performance.



Water, Water Everywhere

The iWater system interfaces with water treatment equipment management systems, application computers that need to forecast the system, and real time water management DB servers. It has the flexibility to communicate with other third-party software even though local PLC and DCS systems are included.

GE provides customer-focused OEM contact to achieve great customer satisfaction and has stepped forward as a long-term business partner with a win-win strategy. K-water developed many efficient applications as well as mobile monitoring system and included in the iWater brand as part of its business master plan.

An integrated operating system, the iFIX-based GIOS has many redundant features and is functionally distributed for the highest level of reliability and performance. Identical servers run in parallel, so if one fails, the client can switch to the other server automatically. And, the file server contains recovered process values, messages, and data from the failure time period that can be automatically updated from the archives. In addition, the iFIX server controls the data processing of all events from RTUs and SCADA in the RDAC system. GE technology can also help K-water to secure new water resources by building more small and mid-sized environmentally friendly dams and by building a society free from worries about water stress with technologies for alternative water resources such as deep ocean water, groundwater and desalination.

“We provide a wireless tablet environment by using iFIX’s option of Proficy WebSpace and multi-sessions. It enables K-water’s operators to check data at sites when they fix some equipment failures, so that operators’ maintenance work is getting quicker and more efficient.” Hong Jintaek, System Integrator developer for K-water said.





About GE

GE (NYSE: GE) is the world's Digital Industrial Company, transforming industry with software-defined machines and solutions that are connected, responsive and predictive. GE is organized around a global exchange of knowledge, the "GE Store," through which each business shares and accesses the same technology, markets, structure and intellect. Each invention further fuels innovation and application across our industrial sectors. With people, services, technology and scale, GE delivers better outcomes for customers by speaking the language of industry.

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