**Introduction**

PSI Incontrol’s water management solutions are tailored for the complete hydrologic cycle to provide you with the best single-stop solution for monitoring and control of water quantity, and water quality that ensures the safe and reliable operation of critical infrastructure.

Our wide range of cutting edge solutions for monitoring, management, control, forecasting, and treatment of water as well as environmental monitoring such as drought, flood, climate and landslide, are designed and defined for individual needs. PSI Incontrol provides complete system integration, engineering, implementation, installation and commissioning of all the water solutions customized to meet your expectations. Our engineering excellence will impress you, which is why we have total success with repeat-business and have completely satisfied customers.
PSI Incontrol’s Water Solutions

Monitoring and executing all these systems is by the latest generation of event-based, computer-aided SCADA systems. Our comprehensive, modularly designed SCADA systems meet the requirements for standardization, integration and establishment of compatibility between a variety of products and services available on the market.

**How You Benefit**

1) Optimization of water resources
2) Early warning and management of natural disasters
3) Efficient infrastructure management
4) Decisions based on real-time operational data

- Cost-effectiveness
- Competitiveness
- Reliability
- Safety
Our integrated Flood Management Solution eliminates the complexity of our clients having to develop the SCADA and decision support system individually. The fully integrated solution eliminates the need for multiple operating personnel at the control center as the operator only see a single user interface rather than having to deal with multiple sub-systems. Human errors can be eliminated by providing an interactive “standard operating procedure” built-in within our solutions.

Real-time data such as rainfall, river levels, radar and water quality can be monitored and collected remotely by controllers placed at strategic locations such as confluence of rivers and catchment zones. An automatic validation tool at the front end system will correct errors and fill in missing gaps of data to prevent duplicated needs for error correction if the data is utilized for other systems. Data acquisition controllers are able to provide local automation of gates, pumps, warning systems or even work with remote triggers from the backend system.
Coupled to the models and catchment information system is an upgrade of the conventional Decision Support System (DSS). The Fuzzy Logic based decision making solution called “Qualicision” is aimed at assuring and optimizing the decision by means of intelligent data collection, analysis and balance between target and criteria conflicts. The solution is designed to work on automation, quality checking, flow and processes, increasing technical reliability and human flexibility are combined into a mix of maximum flexibility and highest possible exactness.
Successful Projects

Stormwater Management And Road Tunnel (Project)

- Control & Communication Systems

Our world-renowned Stormwater Management and Road Tunnel (SMART) Tunnel is a unique solution to the Malaysian capital Kuala Lumpur’s long-term traffic and Stormwater management problems and, is the first dual-purpose tunnel of its kind in the world. The tunnel is diverting floodwaters away from the confluence of the two major rivers running through the city center while its central section will double up as a two-deck motorway to relieve traffic congestion at the main southern gateway into the city center.

SMART works on a three mode system. Mode one operates under normal conditions or when rainfall is low such that no water needs to be diverted into the tunnel. Moderate storms activate mode two. This will divert floodwater into a bypass tunnel in the lower section of the motorway tunnel and SMART will remain open to traffic. During the once or twice yearly heavy storms a switch is made to mode three when the tunnel is closed to road traffic and the full tunnel section with a combined capacity of 3 million cubic meters becomes available to divert the dramatically increased flows. Extensive monitoring stations will ensure sufficient time is allocated to allow the last vehicle to exit before the automated watertight gates are opened. The motorway will then reopen to traffic after clearing of the tunnel within 48 hours of closure. Our State-of-the art SCADA system supervises, monitor and control all the flood gates, water tight doors and the road gates. Tunnel Pumps are used to clear the water within the cross-passages subsequently after the flooding.
Greater Kandy Water Treatment Plant

The Kandy Water Treatment Plant located in Sri Lanka consists of the following facilities/equipment for centralized monitoring and control of:

- Raw Water Intake and Balancing Tank
- Overall System of the Water Treatment Plant
- Flocculation Basins and Sedimentation Basins
- Filtration Units
- Clear Water Pump stations
- Chemical Building

The above processes are accomplished by the PLC control systems stationed at each location to automate the entire process, and monitors and supervised by the SCADA system located at the control room in the administration building.
Batu Dam

Batu Dam, located at the north of Kuala Lumpur, provides water supply, sediment control and some flood protection for Kuala Lumpur. The principle features of Batu Dam are the dam embankment, spillway and the outlet works. The integrated SCADA system facilitates automatic and manual operation for monitoring and control at the four locations, namely Control House, Intake Tower, Emergency Room and Guard House. The SCADA system integrates CCTV surveillance system, supervises the PLCs at different locations that automates the whole process through field instruments, transducers and sensors, through a click of a mouse by an operator at the main control center. The entire area is covered by wireless real-time communication for data and video surveillance transfers. Automatic interlocking of emergency gate releases the dam water during very high flood conditions.
Baddegama Water Treatment Plant

The Baddegama water treatment plant, located at the Southern Sri Lanka, supplies the daily production capacity, with additional water supply channeled to the new reservoirs located at six locations for subsequence water distribution. Our SCADA system automated and integrated the control of Raw Water Collection and Flash Mixing, Flocculation, Sedimentation, Filtration, Back Wash and chemical dosing processes. The SCADA facilitates easy user interaction with the plant operators providing them with series of automated sequence of operation for daily running of the water treatment plant.
Central Saxon (Germany) Flood Information Office (LHWZ)

Saxony’s Flood Information Office (LHWZ) located in Dresden is an institute of the Saxon Office for Environment and Geology (LfUG).

The LHWZ continuously monitors the water levels and water-gauges of the waters flowing through the country-wide hydrographical measuring network as well as the dates transmitted by neighboring countries and states. In conjunction with the rain and/or thaw-weather forecasts by the German Weather Service (Deutscher Wetterdienst) the data is evaluated as to the likelihood of flooding.

The system is based on PSI’s tried and tested control systems technology and enables fail-safe operation in real-time. It is therefore possible to access water levels and rainfall information all over Saxony within a few minutes and automatically feed the data into the system. This data is complemented by an interactive voice system which gauge reporters may not only use to capture measured values but also to report “plain” remarks to the Central Office as well as to receive news from it.

The information on rising water levels and flood alerts is transmitted to the local people in charge by the communication platform. If thresholds are crossed, the system automatically raises alarm via fax, e-mail, SMS or telephone call. To prevent that important information is being lost there is a mechanism to confirm messages by the recipient. Messages not confirmed will lead to an escalation.
Building Partnerships Through Empowered People
PSI

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