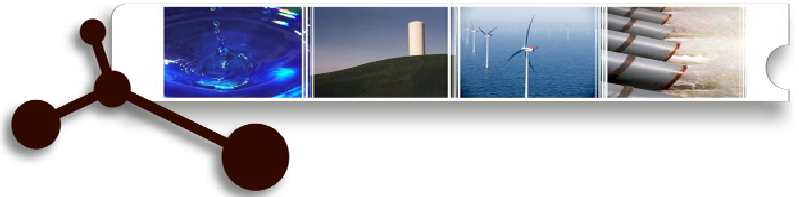


North East Water

Process Information System



Application Note 11

Application

- Extending existing Distributed HMI data into a Centralised Information System
- Automated & Adhoc Process Centric Information Reporting

Technology Applied

- Time Series Protocols
- Improved Integration Techniques to improve Return On Investment
- Retain Existing Control & Monitoring Equipment
- Retain Existing Legacy HMI Software
- Data warehousing (Historian)
- Web based reporting

Engineered Solution

- Improved Management of Water & Waste Water Plant
- Deep mining of process data to find correlation between events in history and real time
- Support for maintaining legacy conventions during process improvement phases
- Flexibility in deliverables and sharing risk via partnering

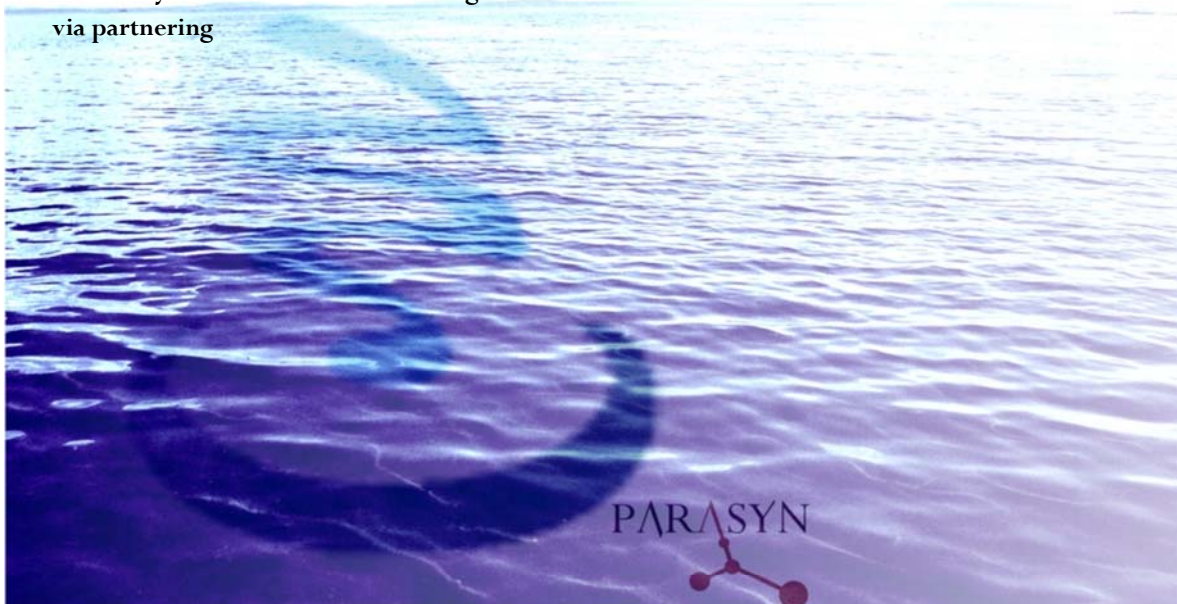
System Topology

North East Regional Water Authority provides water and sewerage services to 36 towns, villages and cities in North East Victoria Australia, serving an estimated population of 95,000 people in an area of approximately 20,000 square kilometres.

The region extends from Corryong in the east, along the Murray River to Yarrawonga, then south to Benalla and the alpine towns of Bright, Mt. Beauty and Dartmouth.

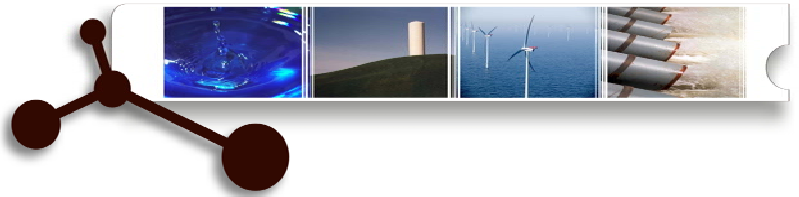
NERWA operates water treatment sites, Ultra Violet (UV) Disinfection, UV Ozone Disinfection, Ozone Disinfection, Chlorine Disinfection-Only Facilities and Wastewater Treatment Facilities. Selected information is monitored using Telemetry equipment and communicates using the Wide Area Network inclusive of PSTN, Private Mobile Radio and Leased Lines. Systems were previously managed by staff visiting plants regularly to check performance and relying on Pager messages for significant plant failures.

From a data management perspective the new system supports all independent systems to be managed in real time from a single process relational database. Process information is time and date stamped in the field equipment based on preconditioned rules and efficiently transported to the SCADA platforms and central data repository. Operational and Data Modelling information is then made available to SCADA Operators, Asset Owners, Field Maintenance Crews and Infrastructure Decision Makers.



North East Water

Process Information System



Execution Methods

NERWA engaged Parasyn to perform a strategy report to understand, diagnose and illustrate strengths and weaknesses of the NERWA Telemetry Networks. This study's efforts were converted into the design basis for subsequent detail design of the new global data management network.

Often consultants are engaged to review systems like this to offer support and advice on what is available and to improve the management of assets. From an end user and consultant's perspective, the difficulty with the traditional approach is that most large systems integration companies do not provide knowledge transfer of their intellectual property to the open market. This means that real innovation and "difficult to develop" solutions are not a part of the consultants portfolio of experience. Nor are consultants likely candidates to win this type of contract and willing to divulge their precious information for subsequent publishing.

The added advantage to engaging systems integrators to understand, diagnose and report is the end user does not pay for this investigatory work twice nor does the integrator minimise what is required to improve the overall system. Minimising or overlooking detail during the investigation stages only serves to reduce the credibility of the integrator and even works to reduce their potential overall scope.

Parasyn focused on key objectives throughout the strategy objectives. This balanced the nice to have items with important issues and allow more focus on the priorities set by NERWA. Some of the important information that is practically presented by integrators with implementation experience never make it to the table when 3rd parties get involved. Such information provides enormous value to asset managers who are often interested in how other asset owners manage their assets and control their risk. Best practice and suggestions normally have little place in a non-partnering environment when contracts are used harshly to bargain and bully the opposition. This was certainly not the case with the NERWA-Parasyn Process Information System Project. Suggestions were tabled during the report presentation and the party best able to manage the risk was ultimately made responsible to solve the issue if it was in alignment with the overall objectives.

System Benefits

NERWA now have the ability to have a clear vision of raw data, rich information and correlated events. This ability is extended to the web browser in such a way that when new ideas are conceived about how plant or process can improve, reports can very easily be developed and constructed "in-house" to substantiate change or confirm best practice is already in place.

In September 2005 it was still early days, but the project infrastructure was in and operating as intended. Closely behind turning on the big switch was the realisation that there was more to the process than the typical SCADA or HMI system could ever possibly detect. For example faults were detected in plant operation that had not been detected in the existing systems perhaps from the day they had occurred years earlier.

Having historical data in a high performance Historian empowers the owner to come back later and test and diagnose after the event. It substantiates, uncovers and opens new potential that two dimensional flat file data management systems have never been able to deliver.

Looking Forward

NERWA's operational and management staff now have access to more information with richer resolution and tools to establish correlations. They can now look forward to continual process improvement during seasonal and economic change. Users do not have to learn any difficult tools, they don't even need to know how the system works, they simply need to have an objective to solve and the Process Information Portal unlocks and exposes process correlations and events.

Parasyn - Process Information & Intelligence

Quality Design is required to implement complex communications and control systems. To understand further how the above system design could be used to control and monitor your plant, including the application of interactive voice response systems, historian databases and web access tools, call Parasyn Controls.

