SYDNEY WATER

STRATEGICALLY MANAGING, PROTECTING AND UPGRADING AUSTRALIA'S LARGEST WATER SCADA NETWORK

SCADA SUMMIT 2018

9th ANNUAL SCADA AUSTRALIA 2018

Sydney water is Australia's largest water and wastewater service provider – supplying 1.5 billion litres of drinking water to 4.9 million customers through 21,000km of water pipes every day. To facilitate effective operations, water purity and overall safety, Sydney Water employs Australia's largest inter-connected water utility SCADA system, with 2,400 network-connected sites linked to a primary SCADA system along with 35 separate SCADA systems at Sydney Water's 16 different treatment plants.

Ahead of the **SCADA Summit 2018** we chat to Mike Wassell, Operational Technology Services Manager at Sydney Water. In this article Mike discusses some of the challenges affecting modern SCADA operations and delves into the technologies and innovations Sydney Water is utilising to help build resilience and secure SCADA networks for the future.

CHALLENGES & OPPORTUNITIES

With conflicting standards, increasing levels of automation and a push to meet renewable energy targets before 2020, despite operating on out-dated legacy systems, there are definitely a number of challenges impacting SCADA operations.

For Sydney Water, Australia's largest water and wastewater service provider, without a doubt the biggest challenge is cyber security and the threat interconnectivity poses to legacy systems and future operations, notes Mike Wassell, Operational Technology Services Manager at Sydney Water. He continues; "SCADA systems, which we use in critical infrastructure, were designed several decades ago, and they were isolated systems at the time; that focused on reparability, reliability and safety, instead of security, as cyber hacks weren't a threat at the time."

Isolated critical infrastructure as it was before, no longer exists however - it's now shifting towards internet of everything, which opens up highly interconnected networks to unauthorised attacks - something these networks have never previously had to deal with.

While cyber security has been around for a long time, it is becoming increasingly more sophisticated in the way the attack vectors are being put together, posing greater risk to all SCADA networks, regardless whether they be utilities, transport or otherwise.

While cyber security is currently posing the biggest threat for not only Sydney Water's SCADA operations, but for all operations across the board, there are a number of other challenges, along with cyber security however, that pose challenges also.

"Continuous change and the rapid rate at which technology is evolving is another challenge, along with – and this is a challenge that has existed for years due to the complex and time consuming nature of SCADA data – is the ability to actually leverage the masses of data collected in a more value added way," says Mike.

BUILDING RESILIENCE FOR THE FUTURE

To help overcome these challenges Sydney Water is leveraging a number of innovations in a bid to better protect their systems and best utilise data collected.

“Increasingly we’re moving into an environment in which we can run analytics and machine learning and increasingly artificial intelligence across data sets to better leverage our data and use it to help shape business decisions. These technologies are also helping to reduce the overall cost of operating and maintaining assets,” says Mike.

He continues; “there are third party tool sets and vendors who will provide Software as a Service for those functions, and the emerging low power one networks, especially IoT, is reducing the cost of devices and communications and providing the opportunity for us to expand networks out closer to customer bases where we couldn’t previously do that.”

Along with leveraging emerging technologies like IoT, Sydney Water is also partnering with other water utilities and various vendors in an effort to build resilience and better manage risks. These strategies include the development of comprehensive data classification frameworks and the rigorous application of SCADA standards to help reduce risk, reduce life cycle costs and improve operations and maintenance efficiency.

As well as the integration of business data intelligence, and the implementation of case tools that streamline operations.

As Mike notes; “to further build resilience we use a number of case tools - so computer aided software engineering tools - which allows us to develop code quicker, test it quicker, and deploy quicker. It also means that when we do deploy something it is the same time after time. So we develop it once and deploy it thousands of times. We utilise business intelligence, and have done for some years. So we’ve put all of our data in a data warehouse and we run some business intelligence tools over it.”

From here the next step for Sydney Water is to begin exploring artificial intelligence and looking into how this can help further build resilience, security and operational process excellence, and to focus more heavily on their recently embarked on Customer Home initiative which links improved network and maintenance operations with improved customer experiences.

“Sydney Water’s Customer Home initiative focuses on improving customer interaction with the organisation through the utilisation of tools like voice and social media analytics, which collect information to determine decision making, business priorities and urgency,” concludes Mike.

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If you're interested in hearing more from Mike about strategically managing, protecting and upgrading Australia's largest water SCADA network, and exploring in more detail the innovations being leveraged to build resilience and prepare SCADA operations for the future, then join us at the **SCADA Summit 2018.**

The event, held in Melbourne on the 30th of May – 1st of June, brings together over 15 SCADA and data security and management experts from the likes of **Coliban Water,** the **DNP Technical Committee, Shell, the Australian Centre for Cyber Security** and **South Australia Power Networks.**

To secure your ticket to the event, and for special early bird pricing, simply fill in the **registration form** and email back to **registration@iqpc.com.au**