Expanding the Possibilities of AMI: Four Advantages Provided by NaaS

A WHITE PAPER BY NEPTUNE TECHNOLOGY GROUP INC.

For most water utilities, walking from meter-to-meter in support of monthly or quarterly billing is a thing of the past. Even mobile reads, which drive greater efficiencies, aren't enough to meet increasing demands to improve customer service, reduce non-revenue water, aid conservation initiatives, and share meter data across other departments.

If your water utility is looking to do more, while staying open to the growing possibilities of deploying a Smart Water AMI Network, consider the following four benefits of Network-as-a-Service (NaaS). As a managed network service, NaaS provides for greater operational efficiency, reduces AMI infrastructure costs, helps manage technology migration, and positions your utility to leverage a Smart Water Network for additional IoT/M2M applications.

1. TOTAL COST OF OWNERSHIP OVER THE LIFE OF THE AMI PROJECT

When it comes to infrastructure, LoRaWAN™ technology was designed so that a little goes a long way. The modulated LoRa® wireless signals are named for being "long-range", while conserving precious battery power. Such LPWAN networks provide key features needed for Smart Water Networks such as wide area coverage, low-cost sensor hardware, low-bandwidth, and high-density connectivity. The technology provides for efficient deployment at an affordable cost to support such IoT/M2M applications as AMI.

Eliminate concerns over aging metering infrastructure and the burden of managing collection devices once and for all. Maintenance or replacement of network infrastructure will no longer be an issue. Your utility won't have to worry about updating collector software, developing network management tools, or ensuring network security.

A bundled NaaS AMI solution provides for:

- Design, build, and deployment of AMI infrastructure
- Ongoing operational costs (e.g., site leasing, data backhaul, preventative maintenance, repair/replacement)
- Continual network monitoring and system upgrades

This frees up your personnel to get back to the business of water. Also knowing the costs up front, without the worries of hidden or recurring fees, makes planning for the future more straightforward.

2. OPEN-STANDARD AMI NETWORK TECHNOLOGY

In the recent past, thousands of utilities have implemented purpose-built systems for either mobile automatic meter reading (AMR) or fixed network advanced metering infrastructure (AMI). Most often

they've owned these systems outright —including the responsibility for design, installation, and ongoing operations & maintenance (O&M) for the life of the project.

Systems that require a utility to deploy, operate, and manage the AMI infrastructure make capital expenditures that much riskier. Especially in the event of a worst-case scenario, such as proprietary technology obsolescence. Instead, consider an architecture based on the open-standard LoRaWAN™ protocol to enable your AMI solution. In addition, the protocol provides for a variety of security features at the network server and end-point device levels to ensure the integrity of all collected data.

Leverage the metering technology you currently have and provide yourself a path forward. With an outsourced Network-as-a-Service (NaaS) solution, built on open-standard LoRaWAN™ technology, today's water utility doesn't have to feel "boxed in" when it comes to a Smart Water AMI network solution. Consider a third party to manage and monitor your AMI system infrastructure. Your utility can save significant time, labor, and money—and instead focus on core water needs.

3. LEVERAGING LoRa® TECHNOLOGY NOW AND IN THE FUTURE

LoRaWAN™ technology's "open-standard" architecture supports a wide range of IoT/M2M applications. Together, a network of remote sensor devices can go far beyond meter reading to support a Smart Water Network, including monitoring and reporting of:

- System water pressure, flow, levels
- Distribution line leaks via acoustic sensors
- Wastewater overflow (CSO/SSO)
- Storage tank levels
- Rainfall levels
- Water quality

Neptune offers the first LoRa Alliance™ certified solution for water AMI networks. Leveraging this connectivity, your water utility can lead the way to a Smarter City through the same Smart Water Network and LoRaWAN™ architecture. It's scalable to other Internet-of-Things (IoT) applications beyond AMI, and supports key Smart City initiatives including:

- Street light monitoring and control
- Public transportation route monitoring
- City parking space monitoring and availability
- Public waste bin level monitoring

Consider the possibilities for your water utility and your Smart City initiatives. Further consider the following questions as you move forward in considering a Smart Water Network solution.

- How can outsourced, open-standard NaaS technology for AMI save time, labor, and money over a proprietary purpose-built solution?
- How can a LoRaWAN™ NaaS solution eliminate infrastructure management and maintenance?
- How would a bundled NaaS solution reduce total cost-of-ownership (TCO) over the life of the proposed AMI system?
- How can I ensure a future-proof system to integrate legacy meter components and software while minimizing concerns for stranded assets down the road?
- How can I leverage an "open-standard" network of sensors to support my Smart City initiatives?

4. FUTURE-PROOF NaaS USING NEPTUNE'S R900® TECHNOLOGY

Future compatibility is winning the day. When a utility has the flexibility to move seamlessly from mobile AMR to fixed network AMI data collection, it removes the pressure of deploying a comprehensive system all at once. It also helps to avoid potential stranded assets down the road.

With R900® end-point hardware from Neptune®, detailed data can be collected by mobile or fixed network methods from the same end-points. At all times, the LoRa® enabled R900® end-points communicate through the technology's unique interleaved AMI and AMR mobile messaging. If a natural disaster causes a network or collector outage, you retain the flexibility of backup mobile reading capability of the same end-points. This makes adoption of advanced reading technologies possible at your utility's own pace.

In addition to hardware compatibility, a system such as Neptune's helps ensure out-of-the-box software compatibility through specially-engineered application program interfaces (APIs). These APIs ensure that AMI information is easily integrated with customer information system (CIS), customer care and billing (CC&B) system, geographical information system (GIS), work order management system (WMS), and other back-office enterprise applications.

PREPARING FOR THE FUTURE

The Smart City of tomorrow will build on today's Smart Water Networks. Prepare to meet your future needs today with a fully managed and monitored, open-standard NaaS solution from Neptune. Learn more to win your day at neptunetg.com.

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