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Case Study

A detailed discussion on Remote Monitoring System, a solution developed under a joint venture of **System Level Solutions** and **SENS-ie Tech**.

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CHALLENGE

With automation penetrating across industry spheres, the same was realized by Naroda Environment Projects Ltd., a company based in Ahmedabad, with major offerings specializing in the treatment and testing of chemically mixed water. A major challenge that NEPL faced on a daily basis was that the entire timeline of steps was being carried out manually.

On every scheduled time slot, a solenoid valve and a pump had to be opened in unison to get rid of the water from various industrial units into the river. Apparently, both the equipment are distant from each other and at times, the personnel(s) tasked with the job struggled to keep up with the dedicated time slots. Besides, as both the equipment had to be operated in sync, the inability to maintain a certain level of preciseness and risk of multiple system failures, always prevailed.

As a result, a dire need was felt for an automated system or a solution capable of operating as per meticulous timings and utmost precision.

APPROACH

To identify the most feasible opportunities, System Level Solutions did a comprehensive observation of the devices within its arsenal, that would render features & functionalities capable of serving this specific use case. Under the supervision of the technical team, a need for at least three framework types was confirmed-

A device capable of performing remote controlling using external networks.

A cloud portal for pre-defining the parameters.

A system capable of transforming sensory information to the cloud wirelessly.

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SOLUTION

After taking into cognizance every meticulous technical requirement, NWK2RLY and NLC1242 were found to be the ideal fit for dealing with the water management woes of NEPL. Post-installation, both the devices were integrated with a cloud-based portal using respective MAC addresses. For pre-defining the values, the personnel configures a scheduled time for opening & closing of the valves, along with water volume inputs in the portal. The entire system of devices & a cloud portal remains good to go.

Network 2 Relay (NWK2RLY) is a LAN relay module that supports remote monitoring through a multitude of options viz. web portal, command line, or external web utility. Being powered by Yalgaar to gain access control via a cloud, the module finds its applications in IoT, industrial & home automation, irrigation and network watch-dog systems.

FEATURES

- Robust Network Support
- Supports multiple operation modes
- Supports device commissioning using Nebulae APK over Bluetooth
- Supports MQTT-based Yalgaar cloud framework with secured connection
- Reliable and secure network connection using a fail-safe mechanism
- Supports commands to trigger relays - ON, OFF, Toggle
- Supports Auto ping and Reboot modes
- Supports password protection mechanism

APPLICATIONS

- Smart Home Automation
- Industrial Control Application
- Server Management and Control
- Agriculture Monitoring
- Environment Monitoring
- Smart Metering Solution
- Smart Cities and Building Solutions

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To take care of data transfer, **NLC1242** was considered to be the ideal controller for this task. Basically, an industry- standard data acquisition system, the primary function of this controller is to transfer sensors data wirelessly to the cloud. It comes powered by Nebulae and Yalgaar, allowing easier integration in the existing system with a provision to manage data from the cloud. The device is designed to cater to a multitude of industrial and non-industrial use cases.

BENEFITS

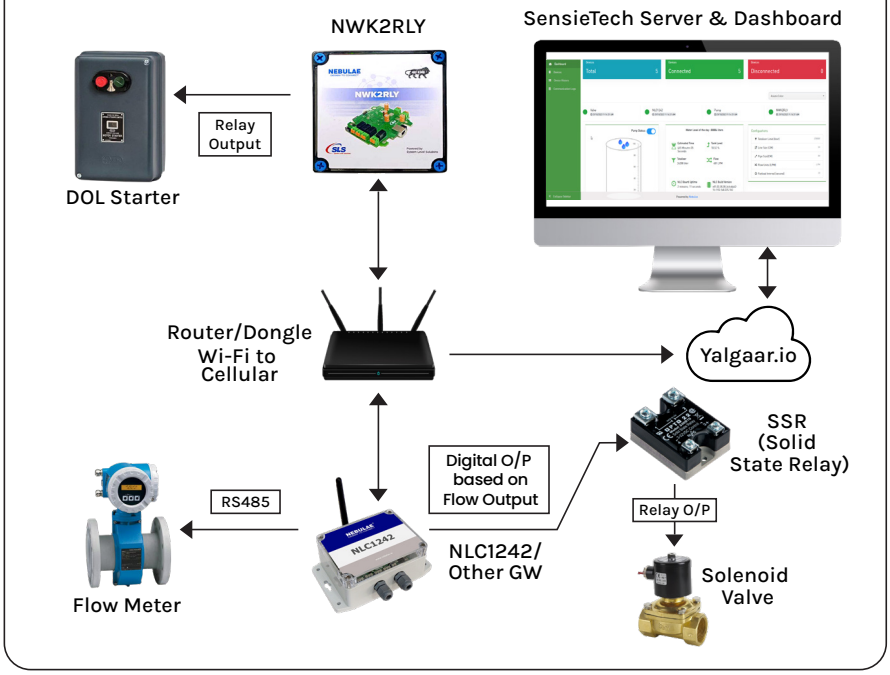
- A built-in, lightweight web server for remote configuration
- Ready-made Yalgaar SDKs for end application development
- Wall mount enclosure and easy to install

APPLICATIONS

- Generator Monitoring and Projection
- Waste and Waste-water remote monitoring
- Flow Monitoring
- Motor Protection: Winding and Bearing Temperature
- Machine Condition Monitoring

This is how the entire apparatus of the Remote Monitoring System is designed to work.

FLOW DIAGRAM



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