



History

AUTOSOL was founded in 1987, providing integration services for industrial automation. The company recognized the lack of proper software to assist with Supervisory Control and Data Acquisition (SCADA) and Automatic Meter Reading (AMR) communications for industries with remote operations. The development of the AUTOSOL Communications Manager (ACM) allowed users to communicate to the majority of industry remote measurement devices without relying on limited or expensive proprietary software.

Before, in many systems, a physical protocol translator could be required to connect certain devices to Human Machine Interfaces (HMIs). In other situations, the remote device vendor would heavily encourage or require a vendor-branded HMI. In response to this, AUTOSOL has developed drivers to connect to a wide variety of Remote Terminal Units (RTUs) and Programmable Logic Controllers (PLCs). Leveraging Microsoft data standards, ACM allows customers in many industries the freedom to choose the right field equipment for their needs.

AUTOSOL has expanded beyond communications software, developing field-oriented “smart” devices to improve efficiency and security, and HMI system integration. AUTOSOL’s integration services have produced clean and effective systems in many industries, including water management, wellhead production, midstream pipelines, gas distribution networks, building management, and even airports.

Through industry-leading communications software and innovative HMI development, AUTOSOL products and installations assist in the transport of over 50 percent of the natural gas in the United States, and over 175,000km of pipeline.

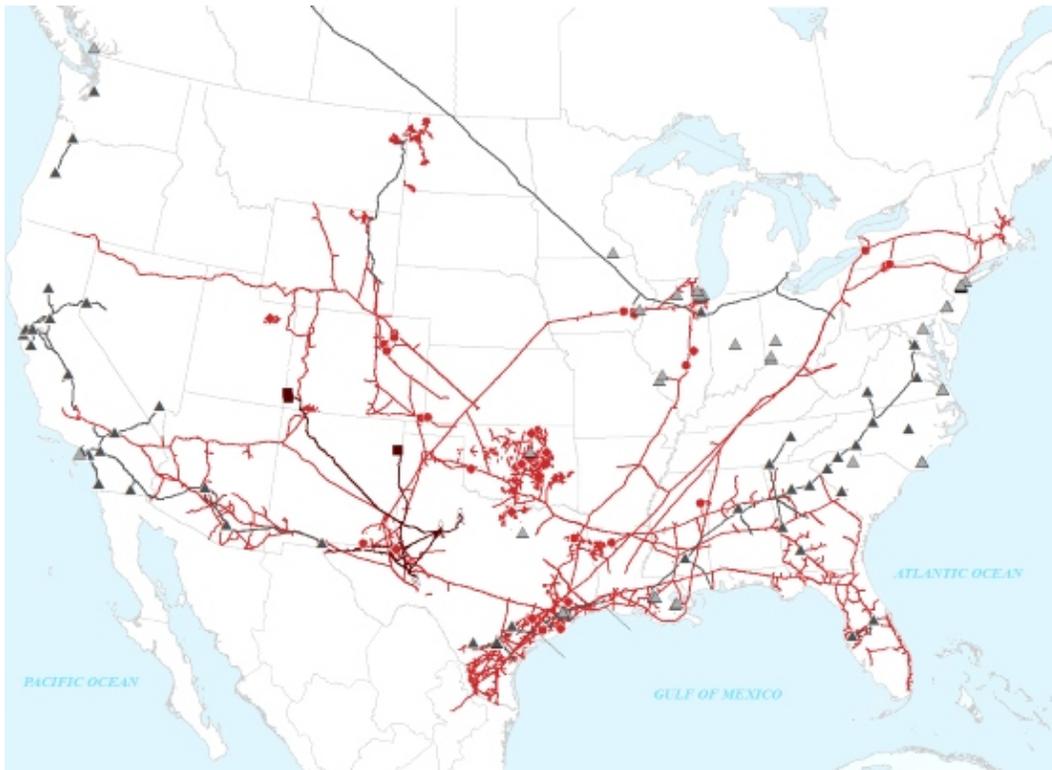


Figure 1: Some of the liquid and gas pipelines using AUTOSOL software across the United States

Helping Customers

One of AUTOSOL's success stories comes from a major oil and gas transporter in the United States. This company operates tens of thousands of kilometers of pipe, including natural gas transmission, hazardous liquids batching, wellhead gathering and underground storage. The company wanted a consistent SCADA experience across their network, which would be easier to maintain and allow for commonality between systems. Despite having a varied portfolio – from moving refined gas, to collecting wet gas, delivering to distribution networks and shipping jet fuel – AUTOSOL was able to provide the expertise required to normalize all the systems under a common SCADA infrastructure.

Facing out-of-support software and aging computer equipment, the oil and gas company was working with a previous vendor to implement a replacement SCADA system. After several years of development, the pipeline company still did not have even a partial SCADA system. The company then approached AUTOSOL to step in, to start from scratch and rapidly integrate AUTOSOL ACM and an AUTOSOL-designed ClearSCADA HMI application.

The ClearSCADA HMI was a system where operators in a secure facility could control the pipeline from thousands of kilometers away. The ClearSCADA HMI provided the operators with a complete awareness of the pipeline, while ACM provided reliable communications to allow for historical data retrieval and timely real-time data from the RTU. Combined, the AUTOSOL package allowed safe, remote control of the system twenty-four hours a day.

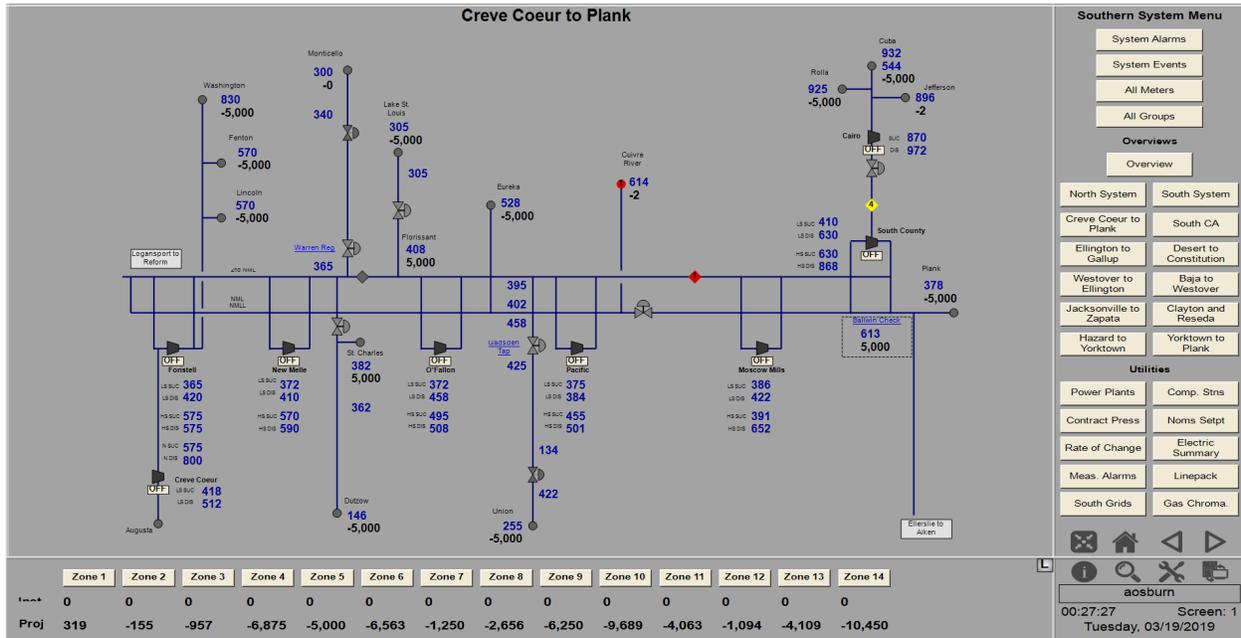


Figure 2: An operational overview of a section of pipeline, showing example alarms

In a couple circumstances, the RTUs utilized in certain regions were custom-programmed and did not adhere to other standard protocols. In this case, AUTOSOL worked with the customer to understand the protocol changes and to integrate those requirements into a new driver. Occasionally these changes were difficult, due to old or incomplete documentation. Nonetheless, working together, the required corrections were implemented, and the driver became even more robust. AUTOSOL is always willing to work with the customer to use its talented protocol developers to expand ACM’s capabilities.

AUTOSOL provided on-site engineers to assist with the project in any aspect. The AUTOSOL SCADA team was knowledgeable in communications software, graphics, infrastructure, and industry standards for long-distance automation and control. These skills are constantly being advanced through internal research and experimentation with new technologies.

While on-site, AUTOSOL developed strong relationships with the customer’s team. The SCADA integration group is committed to train and assist customer employees, so the customer can understand the system on their own. During the learning phase of the project, AUTOSOL’s on-site engineer provided lessons in advanced HMI controls, demonstrations of AUTOSOL utilities, and participated in discussions on “best practices” for safety.

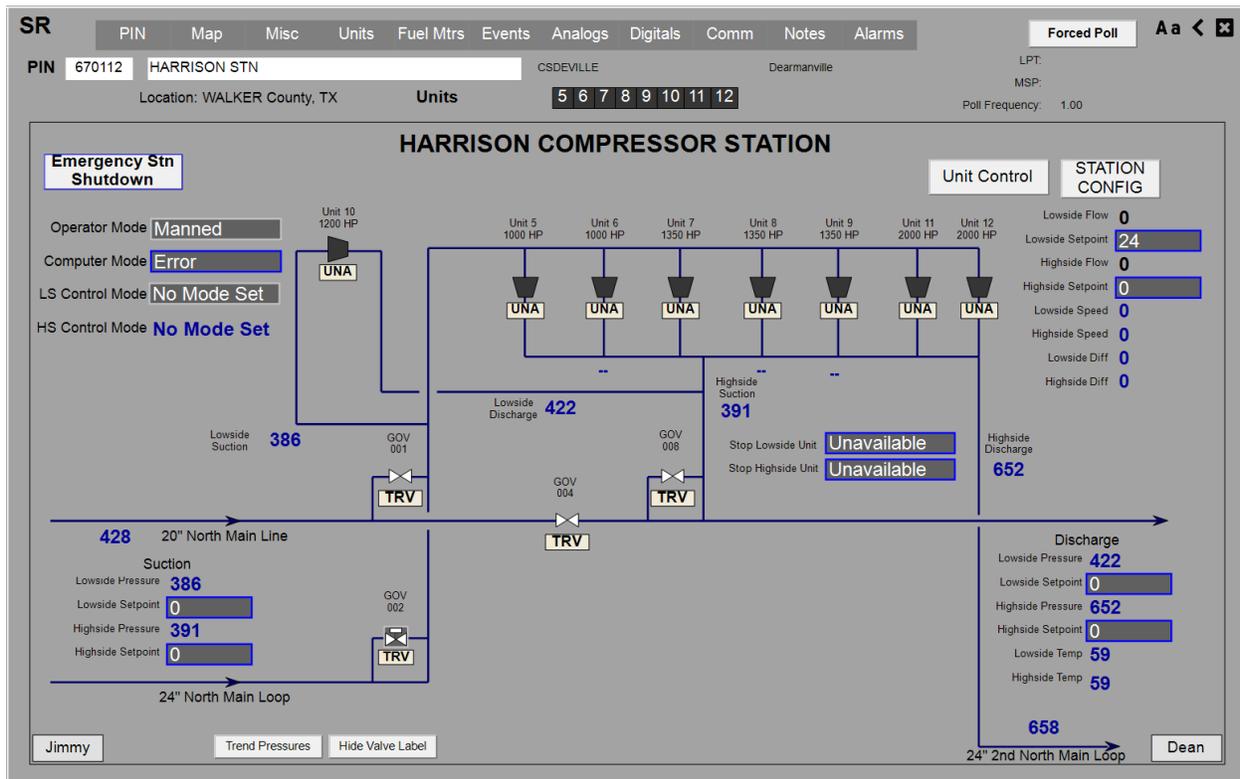


Figure 3: An example compressor station display, with several compression units

These conversations took place all across the company in many different departments. There were programming talks with SCADA engineers, alarm discussions with regulatory managers, and troubleshooting with field technicians. AUTOSOL employees familiar with the SCADA side would work together with gas control and operations personnel to understand the pipeline to make educated decisions on how to implement functionality within the application.

Training and learning is a constant experience with AUTOSOL. Formal training for ACM and ClearSCADA occurs in the main offices (Houston, TX and Calgary, AB) or on-site with the customer. This formal training gives advanced details into how to operate the AUTOSOL products. In addition, special targeted training was a frequent occurrence in this project. Several advanced classes in AUTOSOL’s OneSCADA mass-configuration product enabled the customer SCADA team to begin understanding the inner workings of the system.

However, formal training sessions can only explain so much. AUTOSOL’s on-site engineer hosted smaller, less formal lessons with the customer’s team, allowing easier questions and hands-on experience. These sessions were aimed at the customer’s specific issues and demonstrated system troubleshooting, scripting, and maintenance. The goal of the AUTOSOL engineer is to give the customer the knowledge they need to work on the system for themselves. AUTOSOL support is more than happy to help, but it is the customer’s understanding and partnership which is the most rewarding for the SCADA group.



AUTOSOL's support team provides clients with quick access to problem solving, allowing customers to work confidently. AUTOSOL's capable support team is available to help over the phone, email and web meetings to troubleshoot any issues that arise. Twenty-four hour support is also available, utilizing the support and engineering team on rotation to make sure there is full coverage of any difficulties that arise.

Flexible schedules and travel capability have allowed AUTOSOL to handle unexpected project difficulties. In one instance, the customer needed assistance configuring a backup control site for several pipelines, in which AUTOSOL engineers were able to work on-location in short notice. In another, the customer had a shortened deadline for a project and required last-minute changes from operations. AUTOSOL engineers were able to implement the required changes on-site and maintain the project's schedule. The engineer was able to continue the process remotely after returning to Houston.

During the project, additional pipelines were added to the conversion project, including hazardous liquids pipelines. This proved no difficulty to the vast protocol library of ACM and the technical expertise of AUTOSOL SCADA engineers. Even when multi-national liquid pipelines were added, AUTOSOL's Canadian office in Calgary, Alberta, was able to support the implementation project on several pipelines in Western Canada.

After merely eighteen months, AUTOSOL and the customer SCADA team converted almost 13,000km of pipeline to ACM and ClearSCADA. This new control system adopted modern industry-standard graphics interfaces which enabled the operator to respond faster to abnormal conditions, along with more effective alarm reporting, and easier system maintenance.

Maintaining Relationships

Over the next three years, AUTOSOL remained a close partner to the customer helping convert nineteen pipeline systems totaling over 4500 RTUs and over 33,000 kilometers of pipe. Short timelines and project changes would create difficulty for the customer, but together with AUTOSOL, the hurdles were cleared. For example, when presented with a last-minute request for advanced line pack displays, AUTOSOL's on-site engineer worked one-on-one with gas control personnel to design a system which increased the effectiveness of pipeline control's planning.

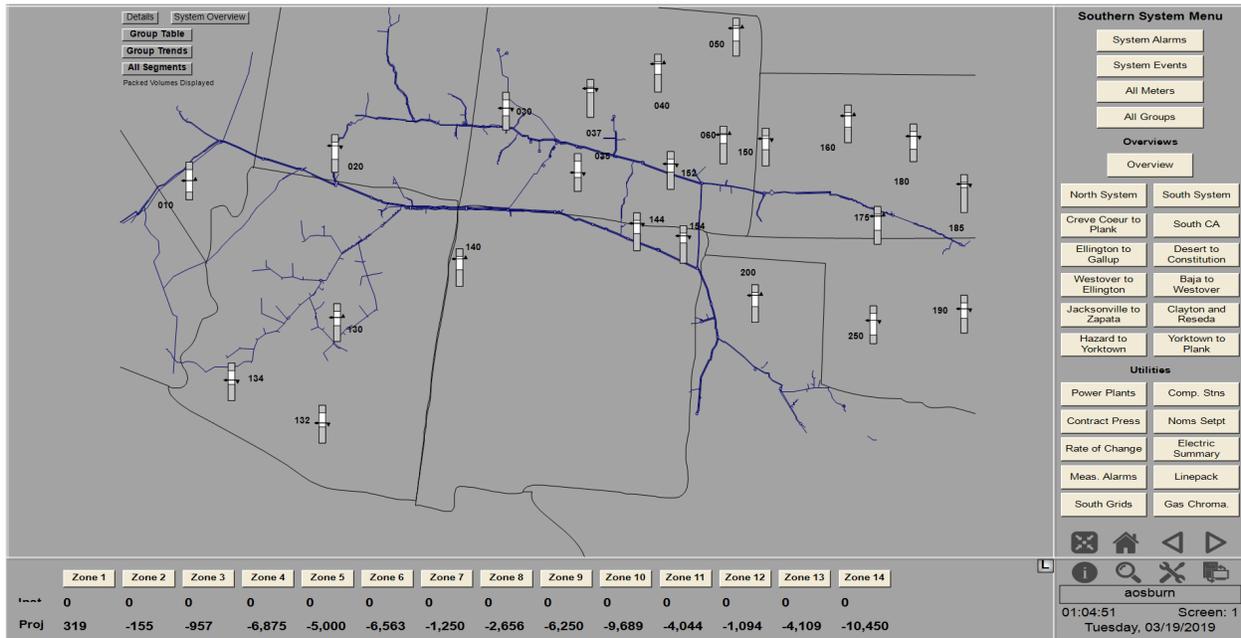


Figure 4: A display reflecting line pack status across a pipeline using small bar graphs

After AUTOSOL lessons and joint learning experiences, the customer's SCADA team built and commissioned a system largely on their own. AUTOSOL remained nearby to assist when needed in times of difficulty, or overburden. This also demonstrates the flexibility and openness of the AUTOSOL SCADA software, which does not prevent end users from adding devices, displays, or even functionality on their own.

To maintain these long-term close relationships, yearly checks of the SCADA system by AUTOSOL have been performed on customer systems in order to provide recommendations and tuning to keep the SCADA system running smoothly and up-to-date. This service is critical to ensure the longevity of a customer's investment and helps prevent surprises if there are hidden inefficiencies that may eventually lead to system difficulty.

In certain cases, customers also need more local support. While AUTOSOL engineers frequently travel to where they're needed, occasionally new employees are hired on locally to help assist with a project, which operate either remotely or at a customer's location. AUTOSOL's Calgary, Canada office was founded this way. After hiring local engineers assisting with a Canadian project, the number of people expanded until a full-fledged office was in place. Since its founding, the Calgary branch has become the technical support headquarters of the company.

When new challenges arise, AUTOSOL is proud to be available to assist customers in many different aspects of industrial automation, backed by decades of combined experience and excellent support teams. AUTOSOL's main goal is to enable customers to save money and time, and to work together to make sure the customer is comfortable operating their own system.