

*How to Build*

# *Point-to-Plantwide*

*Solutions*

Quality Data Acquisition  
Process Control



**Microsoft**<sup>®</sup>

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## We're here for you

### When you need help...

You're using sophisticated and powerful tools in increasingly complex computing environments. Getting the technical support you need can be critical to your success.

### ...We Deliver

Automation ONSPEC Software offers support services that can be structured to fit your specific needs and unique requirements, allowing you to maximize the return on your investment. We offer annual maintenance agreements, training, and engineering services. We can deliver on-site, by E-mail or over the World Wide Web. We remain flexible to meet your needs.

## ONSPEC products

### ■ ONSPEC

includes:

- ONConfig
- ONBuild
- ONView
- Extract Editor

### ■ ONCall

### ■ ONCalc

### ■ LSO



## Build on the Best...

The ONSPEC Family of Automation Software is built on a robust, proven native 32-bit foundation. Whether you use Microsoft Windows or an OS/2 operating system you can be sure that each ONSPEC product takes full advantage of the environment and provides the most powerful PC based automation offering available today.



## Add innovation...

Technology is moving so fast these days that by the time a project is completed the discussion has begun about add-ons, changes, and new ideas for maximizing productivity gains. Key to gains in productivity is the ability to integrate and maintain legacy systems and to improve quality performance in significant and repeatable ways. ONSPEC is the superior data archive that collects, controls, analyzes and feeds information throughout your enterprise. Your ONSPEC application expands easily using your favorite tools such as JAVA, Visual Basic and C++.



## ...And build a top of the line system

ONSPEC is designed for connectivity - between operating systems, platforms, with other programs and across networks including intranets, extranets and the World Wide Web. ONSPEC works with plant floor hardware and PCs to provide a single workstation or a redundant workplace environment and can interact with third-party MES and MRPII programs in PC, Mini or Mainframe environments.

Data can be brought into ONSPEC from any MMI or other data collection mechanism for use in your enterprise. Installed throughout the world in every industrial environment, ONSPEC provides real-time point-to-plantwide control using sound technologies. The goal of Automation ONSPEC Software is to assist you in improving profitability, process safety and quality through the implementation of our proven products. So whether you're expanding a system, incorporating many different data acquisition solutions, or starting from scratch - contact us today.



## Making Every Drop Count

Jones Environmental Ltd. specializes in the design, project management, supply, installation, commissioning, operation and maintenance of the systems and equipment required for municipal and industrial water and wastewater purification plants.

The company is recognized globally as a market leader in an industry which plays a vital part in building the infrastructure of countries throughout the world. One of many ONSPEC installs is:

Leixlip Water

- Data volume of 60,000 monitoring points
- Fault Tolerant Distributed PLC & SCADA Network
- Remote connection facilities to SCADA from council & consultants
- Intelligent Instrumentation & Motor Manager Units
- Automated connection to EirPage computer system
- Fibre Optic Network
- Data Archiving to Writable CD-Rom
- Online Operating & Maintenance Manuals
- Online as-built drawings



## ONSPEC Components

The standard ONSPEC software package is made up of the following components:

### ONConfig...

is the ONSPEC real-time database configuration and management program. ONConfig makes the configuration, implementation, and maintenance of the ONSPEC system an easy job.

### ONBuild...

is used to create graphical representations that mimic the processes and systems that ONSPEC is monitoring. ONBuild is the main tool used to create ONSPEC Displays.

### ONView...

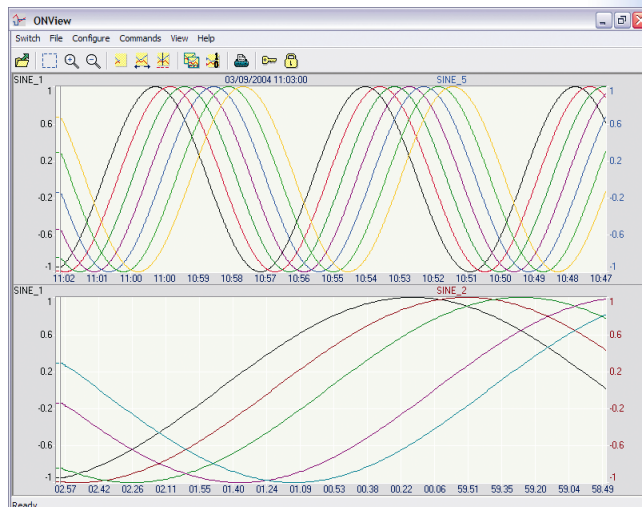
provides high resolution interactive graphic trends for monitoring and analysis of real-time and historical data.

### Extract Editor...

obtains data from historical files created by ONSPEC.

# SUPER Trends

ONView, a real-time scrolling trend server and historical trending analysis package includes engineering spreadsheet, data extraction, bidirectional scrolling, ZOOM & PAN, and other analysis tools. Up to 14 pens per page, and the number of pages is limited only by your system size.



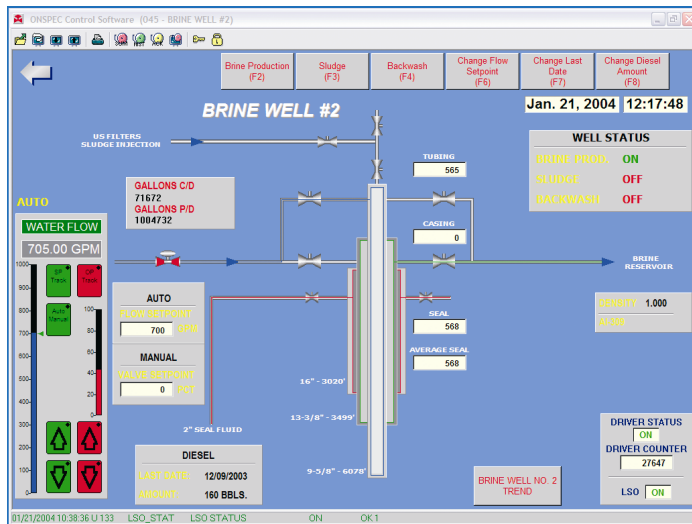
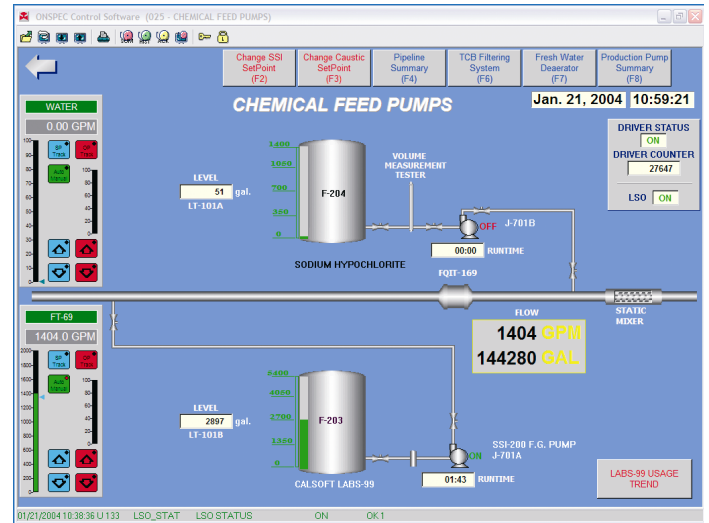


ONSPEC is an advanced supervisory control and monitoring solution designed to work with data acquisition devices to provide real-time monitoring and control for any process environment for ongoing conversations with the heart of your process.

## Get The Point!

ONSPEC provides all the features you expect in a SCADA/HMI package and more:

- Online changes
- Data Archive with data compression to maximize useful information and minimize storage requirements
- Trending in real time and historical mode with ZOOM - up to 7 pens per chart and 2 charts per page
- Alarming with prioritized messaging, summary, history window and user defined alarm logic
- Reporting printouts to screen, printer or file using live or file data



- Real-Time Calculations allow optimization of operator and management functions by initiating data collection with all information available on-line in a real-time spreadsheet
- Sophisticated Configuration is menu driven for alarms, tags, trends and PIDs with easy links between objects and full cross reference of ONSPEC tags names and table locations between workstations
- ONBuild for building displays and symbol builder so you can add to the library of symbols
- Sizzling Graphics to satisfy the artist on your team

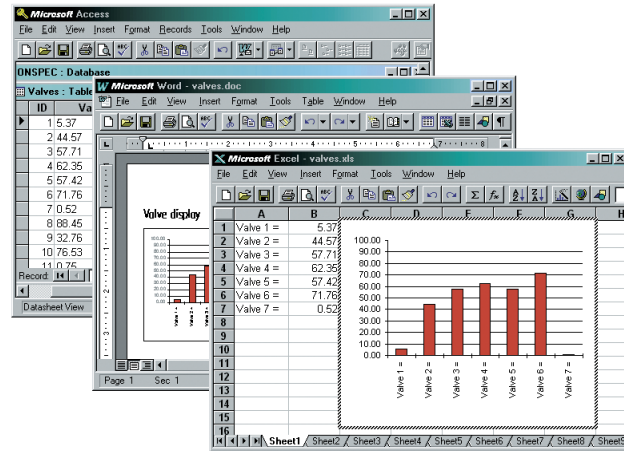
- Versatile Multiple Driver Support so you can view and record information from PLCs, bar code scanners, scales, and sensors continuously
- Bullet-Proof environment allows you to mask function keys, define components of drop-down menus and password multiple levels providing security valid across all ONSPEC workstations
- Powerful Scripting to fire off actions such as pop-up dialog boxes, other displays and programs if certain sequences of events occur
- Warm Start backs up system values according to a configurable time schedule. If the system is restarted the most recently recorded values are reloaded
- ODBC Support

ONSPEC



## Instant On

ONSPEC Command Language (OCL) can be used to fire off programs with a defined program file option from any ONSPEC display. Choose a scheduled start-up or assign an onscreen button or function key to start programs such as Microsoft Access, Word and Excel.

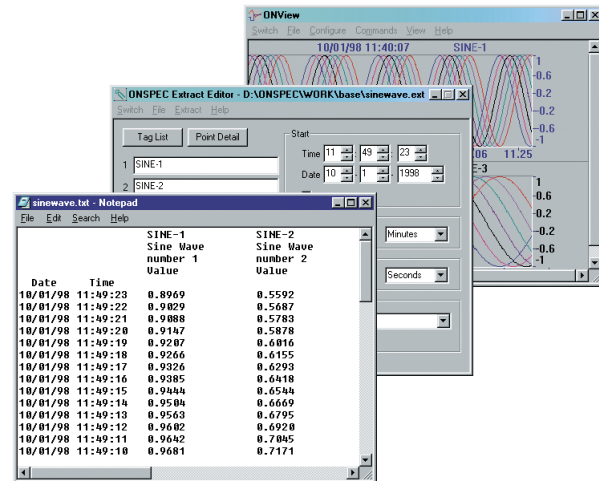


## Extract Editor

ONSPEC Extract Editor obtains data from historical data files created by ONSPEC.

Features include:

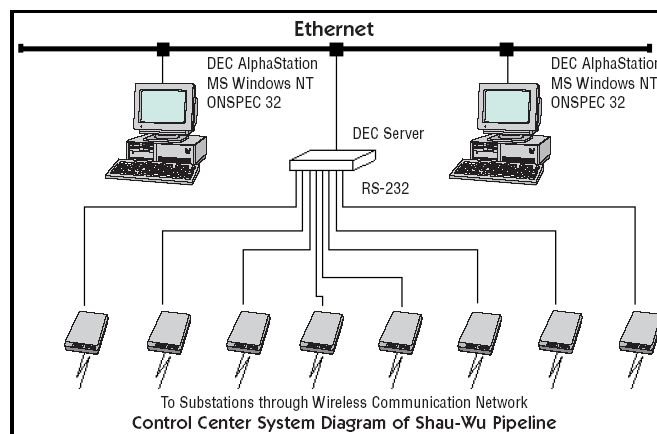
- Presentation of up to 9 variables in tabular form
- Extraction of data for use in other programs such as Microsoft Access, Excel or Word
- Mathematical calculations of variables
- Configurable Time/Date Ranges
- OCL compatible commands



# 输油管监控系统

## Pipeline SCADA System

Shan-Shan is a city in the middle of a vast oil and natural gas field in the Xin-Jiang Autonomous Region in Northeast China. A pipeline that transports natural gas connects Shan-Shan to Wulumuqi, the capital of Xin-Jian. There are 8 transportation stations along the pipeline for temperature and pressure control. Four ONSPEC workstations (OS/2) are used to connect to the local Allen Bradley PLCs to perform all SCADA functions.



Two ONSPEC systems (Windows NT) are used in the central control room in Wulumuqi. Real-time data from the field is transferred to the control room via wireless communication devices. The ONSPEC system monitors and controls the status and operation of all the equipment of the pipeline with

geographical maps, system diagrams, graphics, trends, data, and reports.

## ONCall

ONCall turns your ONSPEC system into a powerful alarm monitoring and notification tool. ONSPEC does the alarm detection and ONCall makes the desired telephone calls, pages, or audio announcements.

### REACH YOUR OPERATORS

When an alarm condition is detected, a user-defined list is consulted to determine who should handle the alarm. Calls are then made in a predetermined order that is valid for the current time at the location being called. A user can be informed of alarms via:

- Detailed messages to alpha pager
- Coded messages to numeric pager
- Detailed alarm messages sent to any e-mail account (including cell phones)
- Detailed alarm messages can be announced through your standard telephone or cell phone
- Pagers can be part of traditional dial-up pager systems or part of an on-site system



### NO RECORDING NECESSARY

A text-to-speech generator is used to make announcements and phone calls. There is no need to record the messages. The text-to-speech generator produces a consistent, easy-to-understand voice.

Announcements are made by dynamically building a sentence from the various fields configured by the user. This sentence is sent to the sound card through the text-to-speech engine.



### POWERFUL SCHEDULING

ONCall permits you to define multiple week schedules identifying days and hours that calls can be made (up to a 52-week schedule).



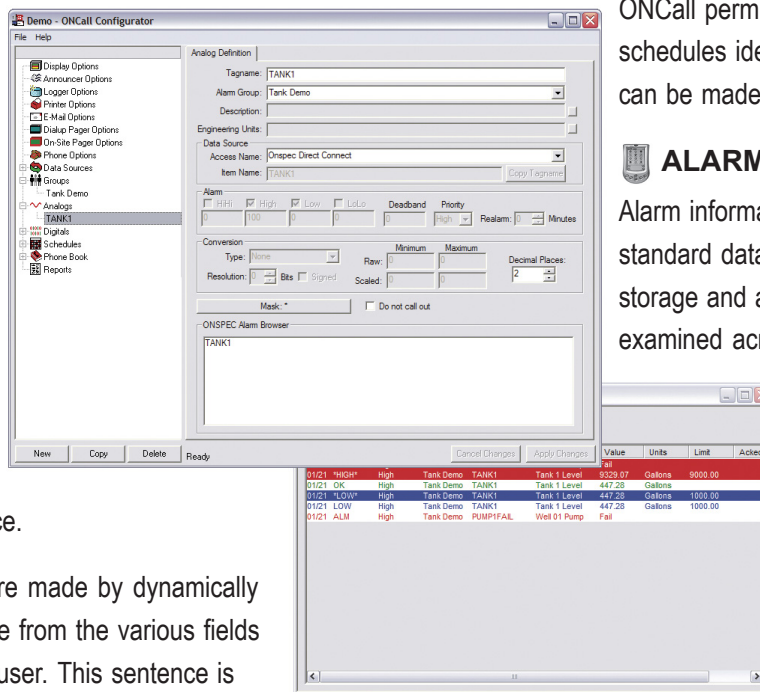
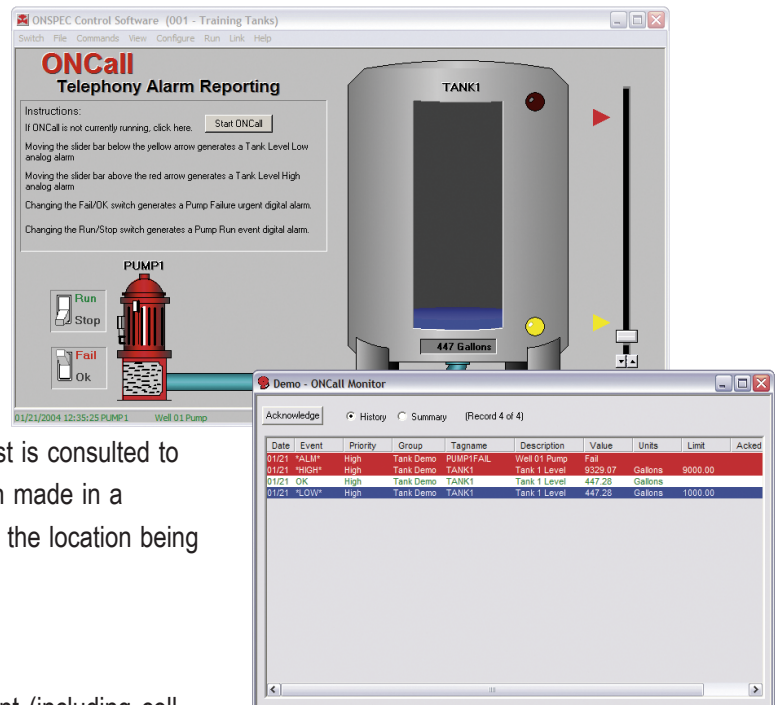
### ALARM HISTORY LOGGING

Alarm information can be stored in an industry standard database format for historical data storage and analysis. This data can even be examined across a network.



### FULLY CONFIGURABLE

Not everyone agrees on the best way to handle alarm data. ONCall was designed to let engineers design an alarm monitoring system in a way that serves them best.



ONCall



## Food For Thought

On the underside of the earth lies the driest continent on the face of the planet - Australia. A country separated by vast oceans from other developed nations. In this land even the trees have learned that self sufficiency is the only way to survive, so the Bottle Trees store their own water and do not rely on a consistent climate. Australian industry is no different. Survival can only be achieved through innovation and the use of dependable control systems that can adapt to the changing economic climate.

That's why ONSPEC Software is used in so many critical applications including water treatment and supply, power generation, mining and food distribution.



Perhaps the best example of ONSPEC's flexibility is the Lauke Feed Mill project. The Lauke plant is a sophisticated stock feed mill designed to make hundreds of different products from chicken feed to pellets for some of the world's finest race horses. Each is formulated to exacting requirements.

Quality Control is a big issue. Without this control, traces of additives for chicken feed could find their way into the race horse mix.

At Lauke everything is linked together and the full power of ONSPEC provides a solution that stretches from point of order entry through the account and stock control system and right down to the production floor. Changes can be made online to cope with daily formulation adjustments, the varying prices for raw materials and unpredictable mix of customer orders.



## Tool Kits & Add-ons

### I/O Templates

Provide an interface between the computer and data acquisition devices, allowing ONSPEC to monitor and control a process. Each template is written for a specific hardware device and designed to take advantage of the hardware's features.

### Tech Pack

Assists the user to write an ONSPEC I/O template. Procedures required to access ONSPEC queues are included. Sample source code provided in the package can be modified to handle the protocol of the hardware device.

### Programmers Pack

Contains advanced tools including alarm DLL usage, Switch list support and OCL extensions such as new function support, addition of dialog boxes and changeable dialogs.

### World Interface

Is a set of tools that allows external programs to access the ONSPEC data tables. Support for C / C++, Visual Basic and Java. This package typically is used to create custom reports or to perform extensive calculations on ONSPEC data.

### Control Pack

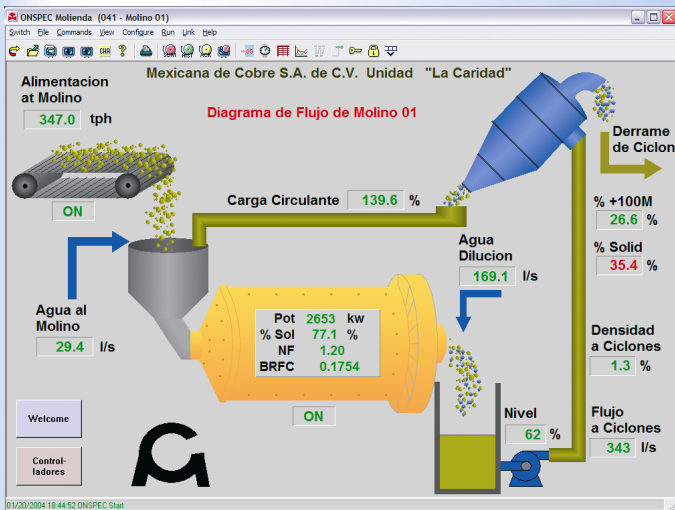
ONSPEC Control Pack contains 15 PID control blocks and the patented 1-for-3 ANN controller for multivariable PC-based control.

### ONCalc

ONCalc is a spreadsheet application that allows you to perform calculations on real-time data collected by ONSPEC.

### LSO

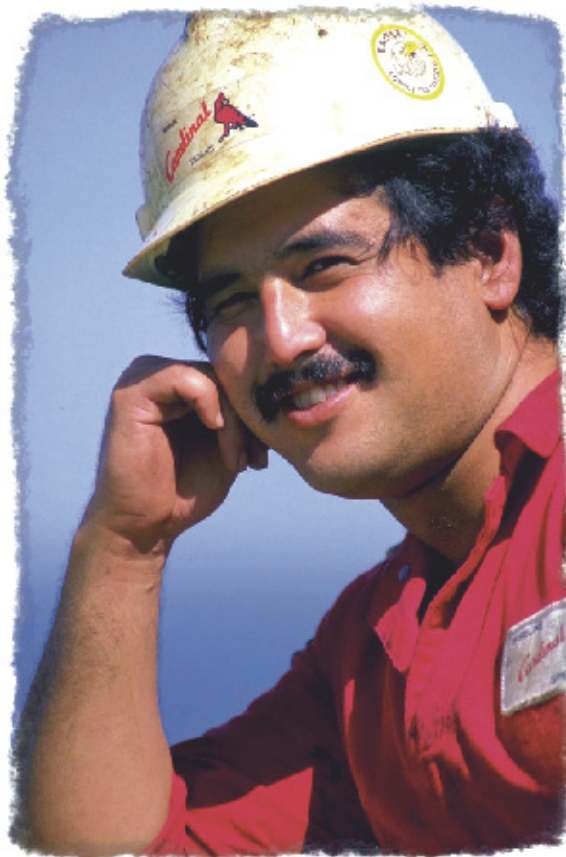
ONSPEC Large System ONNet (LSO) supports the data connectivity, interoperability, and redundancy functions in ONSPEC. LSO transfers live data between ONSPEC real-time databases in different computers on the network. Up to 255 ONSPEC systems on a network can be connected with LSO.



- Do you need a Point solution?
- Or do you have bigger things in mind?
- Plantwide?
- Span the country?
- Communicate around the world?

## Intelligent Copper Production

At the copper concentrator of a major Mexican copper producer, process control of three major plant areas is monitored and controlled using ONSPEC. At the ore crushing plant, 18 crushing circuits are controlled by ONSPEC. Using the ONSPEC World Interface with Visual Age Support, an external expert system continuously adjusts the control setpoints within ONSPEC to optimize production for each crusher circuit. Operators adjust process limits from their displays to provide the boundaries for the expert system. Similar systems are used in both the grinding and flotation plant areas. There are 12 grinding lines and 4 flotation



sections controlled through ONSPEC. EIMCO of Salt Lake City, Utah has installed a plantwide Pyramid System to automatically adjust the targets and limits of three expert systems to balance the production between the crushing, grinding, and flotation areas. The Pyramid System responds to ore type changes and scheduled equipment maintenance down times by modifying the ONSPEC system targets to shift the production burden back and forth between the crushing and grinding sections as the equipment resources are available and ore type dictates. As the flotation mineral separation performance changes the plantwide expert system adjusts the crushing and grinding targets to improve flotation performance.