OPUS software

Specialists in Telemetry & SCADA System Software

OPUS PC6-SQL Telemetry/SCADA System

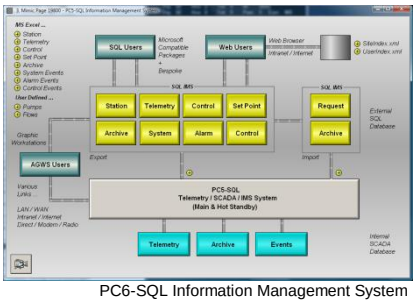
OPUS SOFTWARE presents **PC6-SQL**, the sixth generation of Telemetry/SCADA (Supervisory Control and Data Acquisition) software. This system is without doubt the most capable and technically advanced SCADA software package available today; combining the very latest real-time multi-tasking software with an integrated SQL based Information Management System and sophisticated Web Interface.

Standard System Software

The **PC6-SQL** software is the culmination of 20 years of continued development and refinement. This sixth generation product is designed for use on Microsoft Windows 7 based systems.

The proprietary package is state-of-the-art, having been extensively field proven over the years to provide an extremely capable and flexible system, one that is able to meet your current needs and able to grow to accommodate your future requirements.

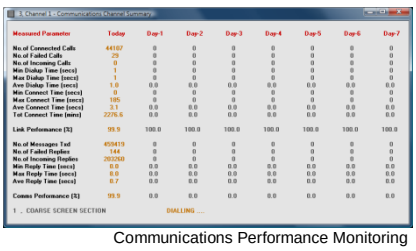
PC6-SQL is ideally suited to all sizes of system ranging from small standalone HMIs to large distributed multi-user telemetry schemes.



PC6-SQL Information Management System

Data Acquisition

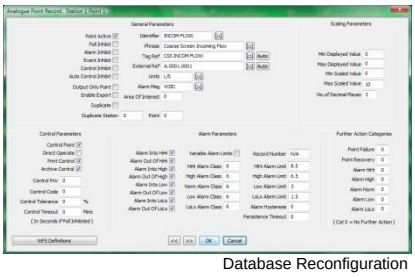
The system is capable of simultaneously communicating over 32 full duplex data acquisition channels using a variety of protocol emulators. Various asynchronous links (bearer circuits) may be utilised including local and wide area networks.



Communications Performance Monitoring

Telemetry Database

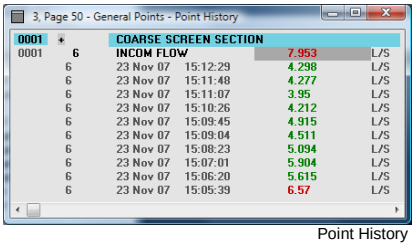
At the heart of the **PC6-SQL** system is a fixed-schema relational database that has been specifically designed for high-speed real-time telemetry access. This database is independent of the SQL IMS and hence provides for both efficient and fault tolerant operation of the Telemetry/SCADA system. In addition, exported telemetry data can be accessed via the SQL database tables using a variety of Microsoft compatible products (MS Access, MS Excel etc.).



Database Reconfiguration

Point Histories

PC6-SQL maintains a history of the most recent significant changes for each and every telemetry (digital, analogue and totalised) point on the system. A point's recent history can be displayed in graphical or summary form with a simple mouse click on the graphic workstation.

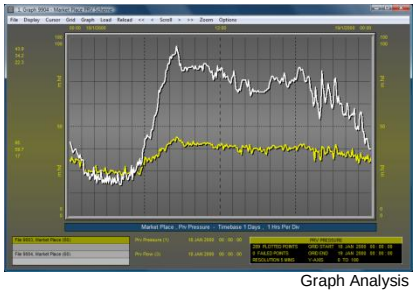


Point History

Point Archiving

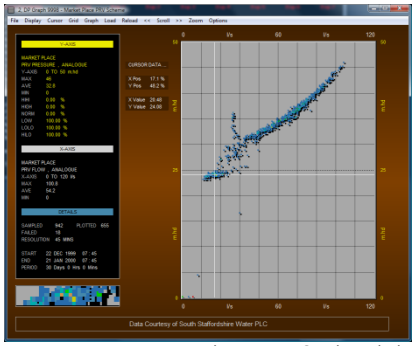
The point archive consists of data files recording all locally sampled and remotely acquired periodic point archive data and time-stamped point archive data. All telemetry points on the system can be archived, including pseudo (calculated) points and points imported from the SQL database. All point archive files are backed up automatically daily and monthly by the system providing an unlimited record.

The Archives Directory lists details of all archives, any that haven't been updated for more than 24 hours are displayed in yellow. Exported archive data can be accessed via the SQL Archive database.



Graph Analysis

Both live and historic data may be examined on the system and displayed in a variety of formats. The Archive Data Manager utility enables you to edit, compress, extract, resize, merge and convert archive data files into text files or spreadsheet formats.



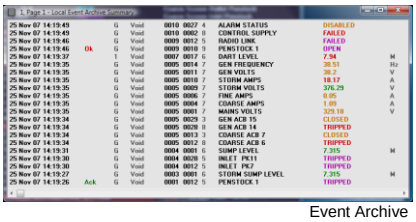
Dual Parameter Graph Analysis

FEATURES

Integrated Information Management System.
Support for both Microsoft Access and Sql Server databases.
Integrated SQL Interface using standard Microsoft packages.
Integrated Web Interface for Intranet and/or Internet browser access.
Powerful Advanced Graphic Workstation user interface.
Management report generation supporting both text and HTML file generation.
Point processing with extensive maths, logic and control functions.
Support for 'out of hours' operation including pager alarms, facsimile reports and SMS mobile texting service.
Full featured Software Development Kit for the Microsoft .NET Framework environment.
Extensive system administration tools, performance monitoring and logs.
Remote diagnostics.

Event Archiving

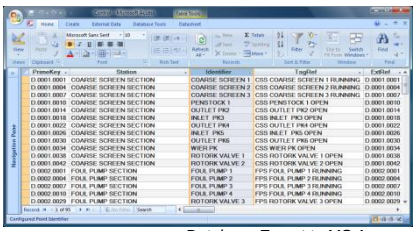
The event archive consists of data files recording all local and remotely acquired time-stamped events, such as point alarms, alarm acceptance, control actions, user login etc. This extensive archive is backed up automatically daily and monthly by the system providing an unlimited record of all recordable events and alarms on the system. In addition, exported event data can be accessed via the SQL Events database.



Event Archive

SQL Database

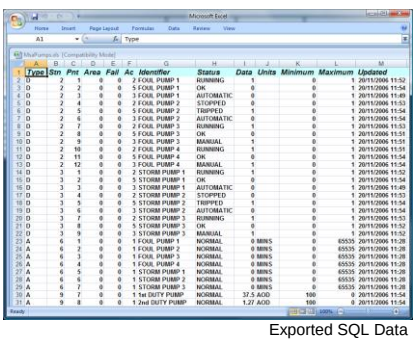
The SQL database tables form the heart of an extensive Information Management System. These database tables are maintained in real-time by the **PC6-SQL** export software. Import tables are used to provide a conduit for privileged SQL and Web users to submit requests (controls, set points etc.) and import new or modified archive data back into the system. The system supports both Microsoft Access and/or Microsoft Sql Server databases and provides access for both Web browser users and any SQL based Microsoft compatible package (MS Access, MS Excel etc.).



Database Export to MS Access

SQL Point Archive

The SQL Archive database records all exported point archive and time-stamped point archive data. Every archive sample is recorded in the SQL Archive along with its time-stamp (to one second accuracy). This data forms part of an unrestricted telemetry point archive on the system.



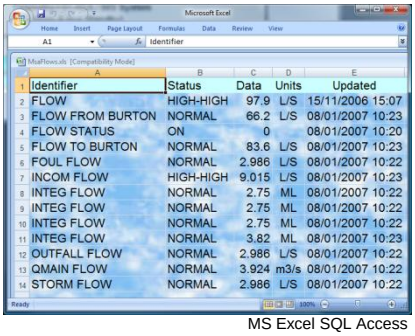
Exported SQL Data

SQL Event Archive

The SQL Event database records all exported system, alarm and control related event data. Every exportable event is recorded in the appropriate SQL database table along with its time-stamp (to one second accuracy). This data forms part of an unrestricted event archive on the system.

SQL Access

The SQL database tables can be accessed by all SQL based Microsoft compatible packages (MS Access, MS Excel etc.). Various proprietary data analysis and presentation packages are also available. The supplied Software Development Kit (SDK) provides support for SQL access and can be used to develop bespoke user applications in any one of the five MS .NET Framework languages, including Visual Basic, Visual C++ and Visual C#.

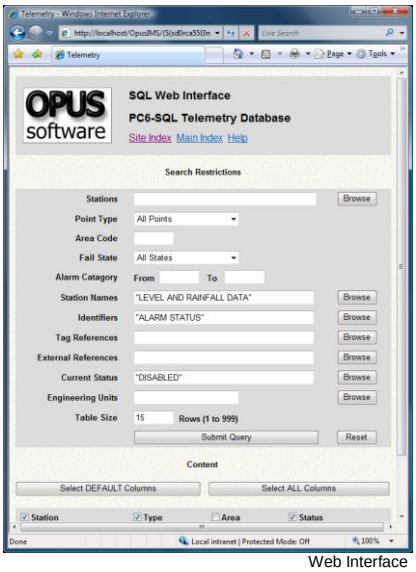


Identifier	Status	Data	Units	Updated
FLOW	HIGH-HIGH	97.9	L/S	15/11/2006 15:07
FLOW FROM BURTON	NORMAL	66.2	L/S	08/01/2007 10:23
FLOW STATUS	ON	0		08/01/2007 10:20
FLOW TO BURTON	NORMAL	83.6	L/S	08/01/2007 10:23
FOUL FLOW	NORMAL	2.986	L/S	08/01/2007 10:22
INCOM FLOW	HIGH-HIGH	9.015	L/S	08/01/2007 10:23
INTEG FLOW	NORMAL	2.75	ML	08/01/2007 10:22
INTEG FLOW	NORMAL	2.75	ML	08/01/2007 10:22
INTEG FLOW	NORMAL	2.75	ML	08/01/2007 10:22
INTEG FLOW	NORMAL	3.82	ML	08/01/2007 10:23
OUTFALL FLOW	NORMAL	2.986	L/S	08/01/2007 10:22
QMAIN FLOW	NORMAL	3.924	m3/s	08/01/2007 10:22
STORM FLOW	NORMAL	2.986	L/S	08/01/2007 10:22

MS Excel SQL Access

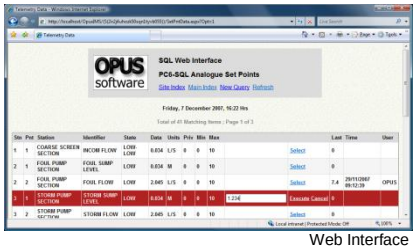
Web Interface

The supplied web applications provide a user friendly, powerful and intuitive web interface to the SQL IMS via either your corporate Intranet or the worldwide Internet.



Web Interface

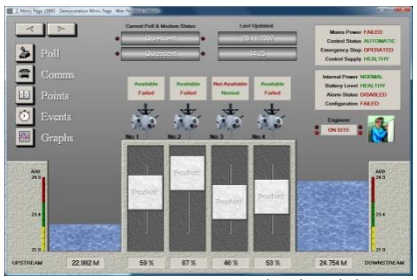
The web interface provides interactive access to all SQL databases using standard web browsers. Privileged users can monitor and control the Telemetry/SCADA system using PCs, PDAs and other small screen devices.



Web Interface

Advanced Graphic Workstations

The workstation software provides a full-featured graphic interface to the **PC6-SQL** system via various forms of asynchronous communications link, including local and wide area networks.

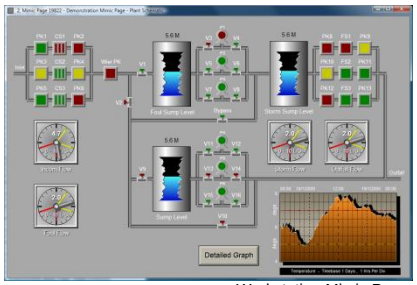


Workstation Mimic Page

PC6-SQL supports a powerful Console Operating System (COS) which is used by the workstations to query the Master station's relational database and affect control over the SCADA system.

Workstation Map Page

The workstation is ideally suited to all forms of operator access, providing a high-performance interface for the display of both real-time text and graphic information, including the display and analysis of archive data, real-time trace data, mimic pages, map pages, configuration and performance data etc.



Workstation Mimic Page

Areas of Interest

An operator's domain can be restricted to certain areas of interest

by assigning unique area codes to the configured stations and/or points.

Controls
Digital and analogue controls may be performed by a privileged operator via either summary displays or mimic pages. The operating privilege level for performing controls is configured within the workstation, an operator must be logged into an account with this privilege level or higher in order to execute controls.

Alarm Display and Management
The workstation displays the highest priority alarm in a dedicated window area and can be configured to vocally annunciate alarms. Numerous summary commands are provided to query the system and display alarm data, optional search restrictions can be used to filter the resulting real-time summary data.

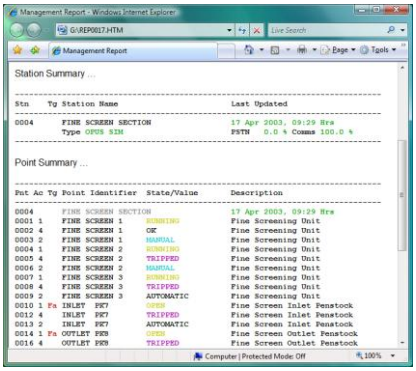
Concert Operation and Messaging
Multiple workstation displays can be controlled via a single keyboard. A message exchange facility is provided between operators and separate **PC6-SQL** sites.

System Security
System security for workstation and web access is afforded using privileged user accounts accessible by password entry.

Out of Hours Operation
The Alarm Paging software provides an 'out of hours' alarm dial out facility to send email, fax, or SMS text messages to selected duty officers or offices.
The system also caters for selective paging of duty officers on a station or individual point basis.

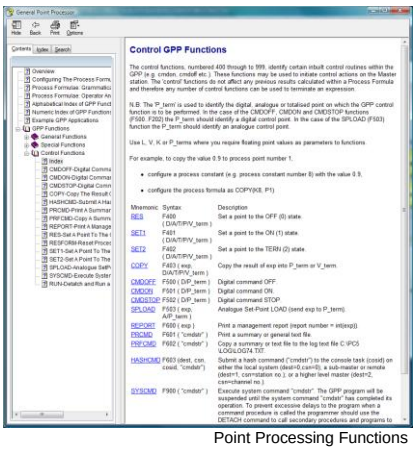
Alarm Dial out to Mobile Devices

Management Reports
The Management Report Generator supports free-format report generation for on-demand, batch and event driven reporting. Both text and HTML report formats are supported. All reports are automatically archived to disk and tagged with unique date/time codes. Text reports may optionally be printed, emailed and/or faxed.



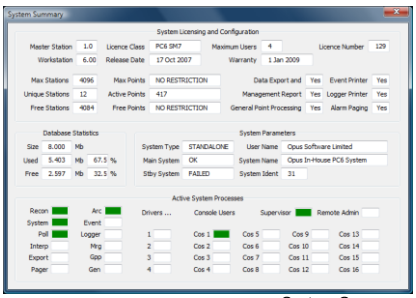
HTML Management Report

General Processing
The General Point Processor provides extensive maths, logic and control functions. These functions may invoke other data processing and control applications, or trigger events such as the generation of reports, alarm dial out, paging, faxed messages etc.



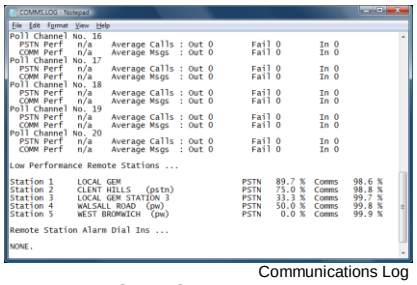
Point Processing Functions

System Administration
PC6-SQL includes an extensive array of utility software to simplify system administration.
Monitor utilities provide real-time statistical analysis of communications and software performance.
Monthly logs are automatically generated and archived for communications performance, system access and reconfiguration.
Other facilities include the monitoring of processes, all communication ports and network links.
Remote diagnostics can be undertaken using the workstation's PSTN or network links.



System Summary

Communications Log
These log files record the monthly overall performance for each data acquisition channel, listing all low performance stations and a record of all alarm calls.

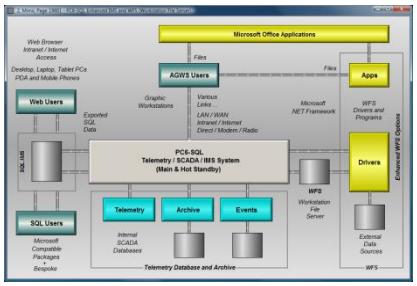


Communications Log

Automated Backup
All key data files are automatically backed up by the system into separate year and month directories, creating a historic log of all configuration, archive and performance data.

Software Development Kit
A fully featured Software Development Kit is provided for the MS .NET Framework environment, supporting object orientated software development in any one of the five MS .NET languages (C++, C#, J#, Visual Basic and Jscript).

Standard Configurations
The **PC6-SQL** system is ideally suited to all sizes of Telemetry/SCADA system and is designed to operate in both standalone and hot-standby environments.
Additional File Servers, SQL Servers, Web Servers and Workstation Servers can be integrated into the **PC6-SQL** architecture to create a powerful and flexible distributed Telemetry/SCADA system.



Bespoke Software
Opus Software can provide bespoke software solutions for all your Telemetry/SCADA, IMS, SQL database needs, including Web applications and Web services.

For further information contact:
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Mob: +44 (0)7860 707 577
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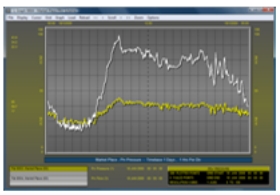
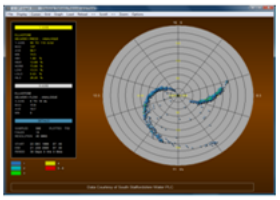
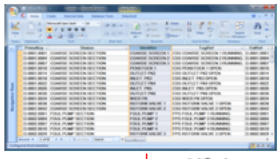
Website: www.opussoftware.co.uk



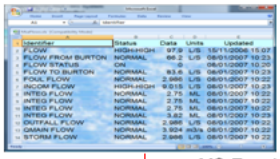


Opus AGWS6 Graphic Workstation

Web Browser



MS Access



MS Excel

Microsoft Office Applications

Web Browser
Intranet / Internet
Access

Desktop, Laptop, Tablet PCs
PDA and Mobile Phones

Files

AGWS Users

Files

Apps

Web Users

Graphic
Workstations

Various
Links ...

LAN / WAN
Intranet / Internet
Direct / Modem / Radio

Microsoft
.NET Framework

WFS
Drivers and
Programs

Exported
SQL
Data

SQL IMS

PC6-SQL
Telemetry / SCADA / IMS System
(Main & Hot Standby)

Drivers

Enhanced WFS Options

WFS

Workstation
File
Server

Telemetry

Archive

Events

SQL Users

Internal
SCADA
Databases

External
Data
Sources

Microsoft
Compatible
Packages
+
Bespoke

Telemetry Database and Archive

WFS