



# Metering Supervisory

The latest issue of our GEMxt is a packaged implementation of Aquidata Excel's well proven base software for metering supervisory systems which has been utilised successfully on many projects since the mid 1990's.

GEMxt is designed for any MS Windows platform running on a modern Intel Pentium (or equivalent) processor using a combination of Oracle and our SDL application definition language to achieve it's function. GEMxt is a high integrity system that is designed to ensure reporting consistency across all metering streams, trains and is designed to run either on single server systems or fully dual redundant clusters. GEMxt is fully scalable from a few streams to over one hundred therefore it can handle both allocation and fiscal metering for multiple assets.

## GEMxt Features ...

Meta-data definitions are used to describe all metering data and functions so that storage, calculations, screens and reports can be handled by standard processing.

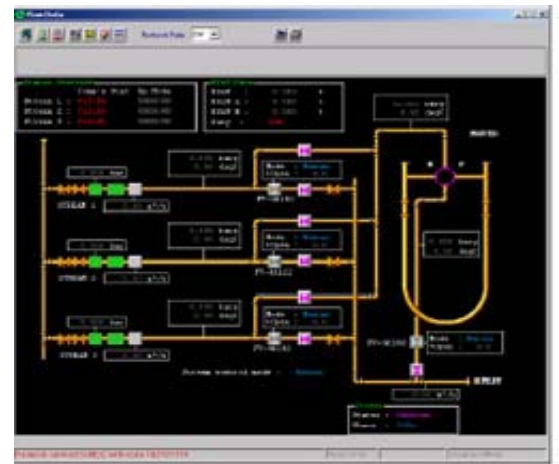
Screen displays can be either auto generated or configured to achieve special functionality or indeed a combination of both implementation methods. These screen sets are independent of the main server calculations and data logging operations and hence can be displayed on any network workstation that has the appropriate connectivity.

Standard reports for stream, station and normal operations i.e. proving and maintenance are provided in the base package, again these can be adjusted as required to suit the special needs of an application. The GEMxt engine provides multiple reporting periods that can be enabled or disabled as required. Within these periods data capture is synchronised ensuring a homogeneous data set for other applications to use (i.e. mass balance).

All process data is written to a minutely history to allow this to be trended and analysed for system integrity by operations, auditors and validation staff. GEMxt integrates with Aquidata Excel's own off-line data management software suite which includes:-

- PALS - Production Allocation Data Management
- Trend 2K - Time Series Data Trending & Query Tool
- REMS - Text and Graphics Data Reporting

Off-line maintenance applications from 3<sup>rd</sup> parties can be integrated with GEMxt using standard MS Windows, OPC or SQL technology. These include both electronic operator log and measurement equipment management packages.



Delivery of effective data gathering, information delivery and management tools to the international hydrocarbon production and processing industries through innovation and partnership with our customers is our business.



# Metering Supervisory ...

## Flow Computer Interfaces ....

GEMxt provides a standardised interface to the Flo-Boss S600, Omni and our own SoftFlow PLC product.

In addition to the traditional flow computer GEMxt also interfaces the electronics supplied with meters that make indirect flow measurements, i.e. Ultrasonic, Coriolis, Multi-Phase etcetera. For these devices, in addition to performing meter point calculations, GEMxt will also log the extensive diagnostic data that these devices provide.

To interface other flow computers e.g. S500, S869M, Daniel Micro 5000, Solatron 7915 drivers from Aquidata Excel's extensive software libraries can be used .

## Sampling and Quality Interfaces ....

GEMxt interfaces various types of gas chromatograph and on-line analyser devices like water in oil meters. Standardised processing normalise, apportion and manage this data from one or more sampling systems.

Auto samplers that collect product for later analysis can be controlled on a flow, volume or time proportional basis.

## Guaranteed Dual Integrity ...

For applications requiring dual redundancy, uniquely amongst it's peers, GEMxt utilises technology direct from Microsoft to provide guaranteed dual redundancy.

This is achieved using "cluster" and mirrored RAID technology embedded within the MS Windows Enterprise Server operating system hence avoiding the use of bespoke software or external I/O switches.

## High Integrity Options ...

Aquidata Excel recommends that to protect the metering supervisory system from data loss dual redundant disks, fans and power supplies are fitted to the GEMxt server.

Because of their excellent reliability record our preferred deployment platform is the DL380 from HP/Compaq this provides on board diagnostic software to monitor and manage the equipment remotely.

## Track Record...

GEMxt solutions include:-

- BP Harding : Pipeline, Storage and Tanker Export metering
- BP ETAP Mirren/Madoes Satellites : Separator input, output and lift gas metering
- Shell Gannet : Gas Export
- ChevronTexaco/PGS Galley : Liquid and Gas Export
- Occidental Qatar - Halul Island : Oil Export
- Lundin Heather & Broom : Oil Export, Gas Import, Plant Allocation and Well Test

Other Aquidata supervisory systems in the field include:-

- ConocoPhillips J-Block : Allocation and Export Metering with R/T process model and Well Test
- Total E&P Elgin Franklin : Allocation & Export Metering and Well Test
- INA Croatia : Ship Tanker Loading/Unloading
- BP CATS : Gas Terminal import and Plant export metering
- Paladin Montrose : Platform export metering
- Talisman Claymore A, Piper B and Saltire A platforms : Allocation, Export and Import and Well Test
- Occidental Qatar - PS1 : Oil Export metering