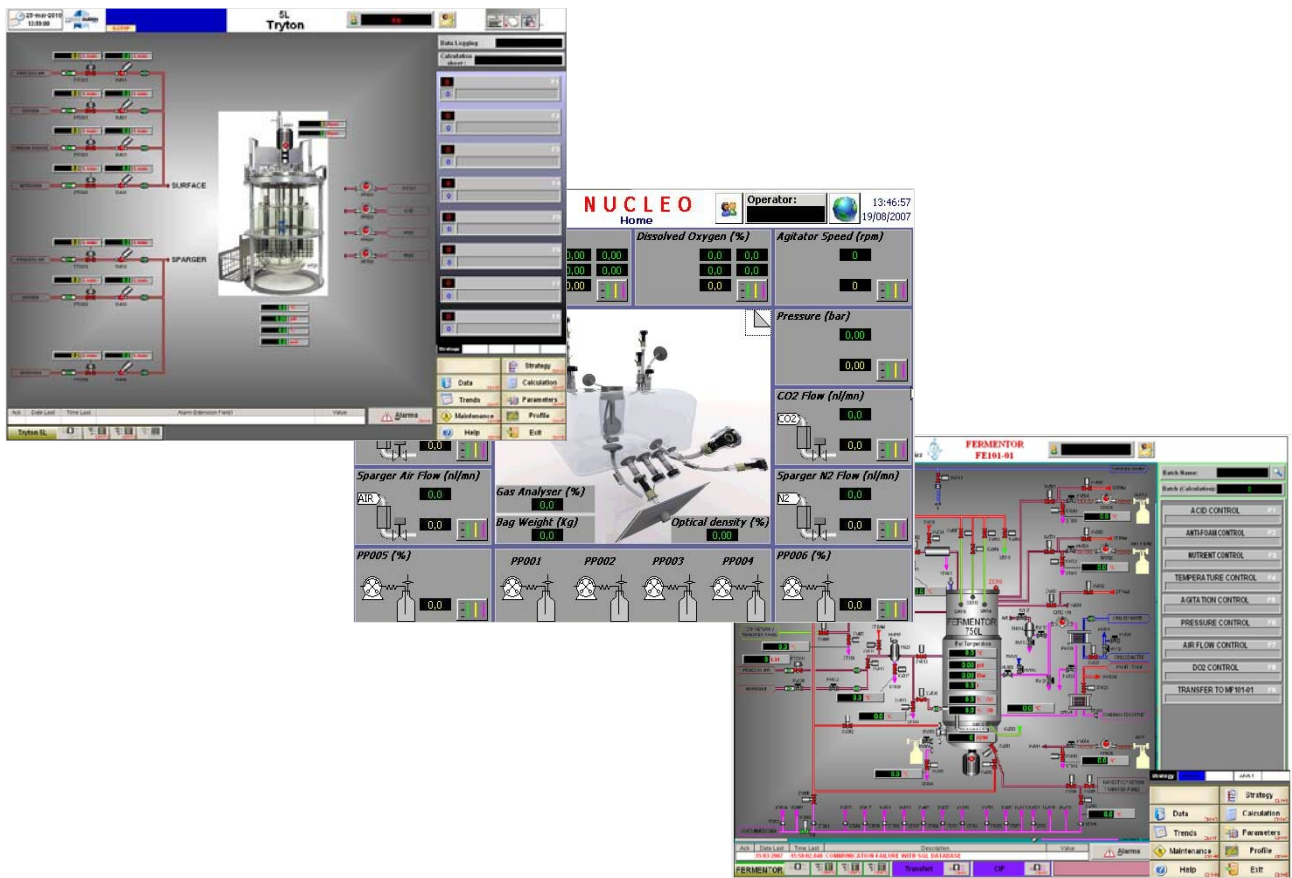


NEPTUNE™ CONTROL SUITE FOR BIOPROCESS APPLICATIONS

Innovative Solutions and Support



Together bring life to your projects

NEPTUNE™ CONTROL SUITE FOR BIOPROCESS APPLICATIONS

NEPTUNE™ designates the suite of control and software solutions available through PIERRE GUERIN – BIOLAFITTE for newly manufactured equipment and system retrofits to support all common fermentation and cell culture processes.

All PIERRE GUERIN - BIOLAFITTE standard fermenters and bioreactors are delivered with one of the three **NEPTUNE™** control options, providing a consistent and effective solution from research & development to manufacturing.

AUTOCLAVABLE
EQUIPMENT



SINGLE USE
EQUIPMENT



SIP/CIP
LAB SCALE



SIP/CIP
PILOT SCALE



SIP/CIP
INDUSTRIAL SCALE

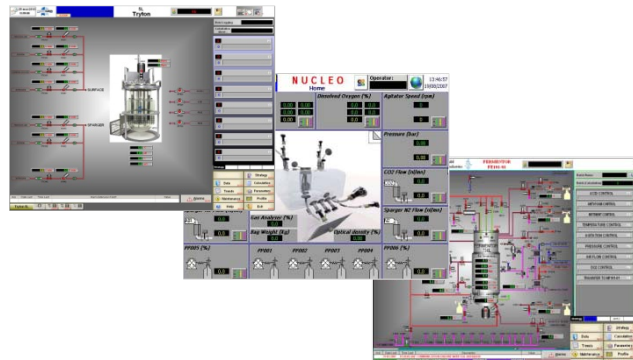


The **NEPTUNE™** control suite is also available for modernisation of your existing equipment regardless of the original manufacturer.

INSTRUMENTATION &
HARDWARE RETROFITS



SUPERVISION
UPGRADE



NEPTUNE™ CONTROL SUITE

HARDWARE AND SOFTWARE ARCHITECTURE

NEPTUNE™ control solutions are developed by the PIERRE GUERIN - BIOLAFITTE Automation Division and run on a range of well known non-proprietary PLC/PC hardware architectures and software platforms.

NEPTUNE™ LAB



The NEPTUNE™ LAB control option utilizes a **Micro PLC and PC** to control all process parameters and data-logging functions

This option is suitable for the **GLP** applications and mainly used in the **Research and Development area**. The most complex bioprocesses can easily be implemented according to the customers own strategies thus making it a cost effective and versatile solution

NEPTUNE™ SCADA



The NEPTUNE™ SCADA control option with either **iFIX** or **InTouch** platform utilizes a **PLC and Industrial PC** to control all process control and data-logging functions

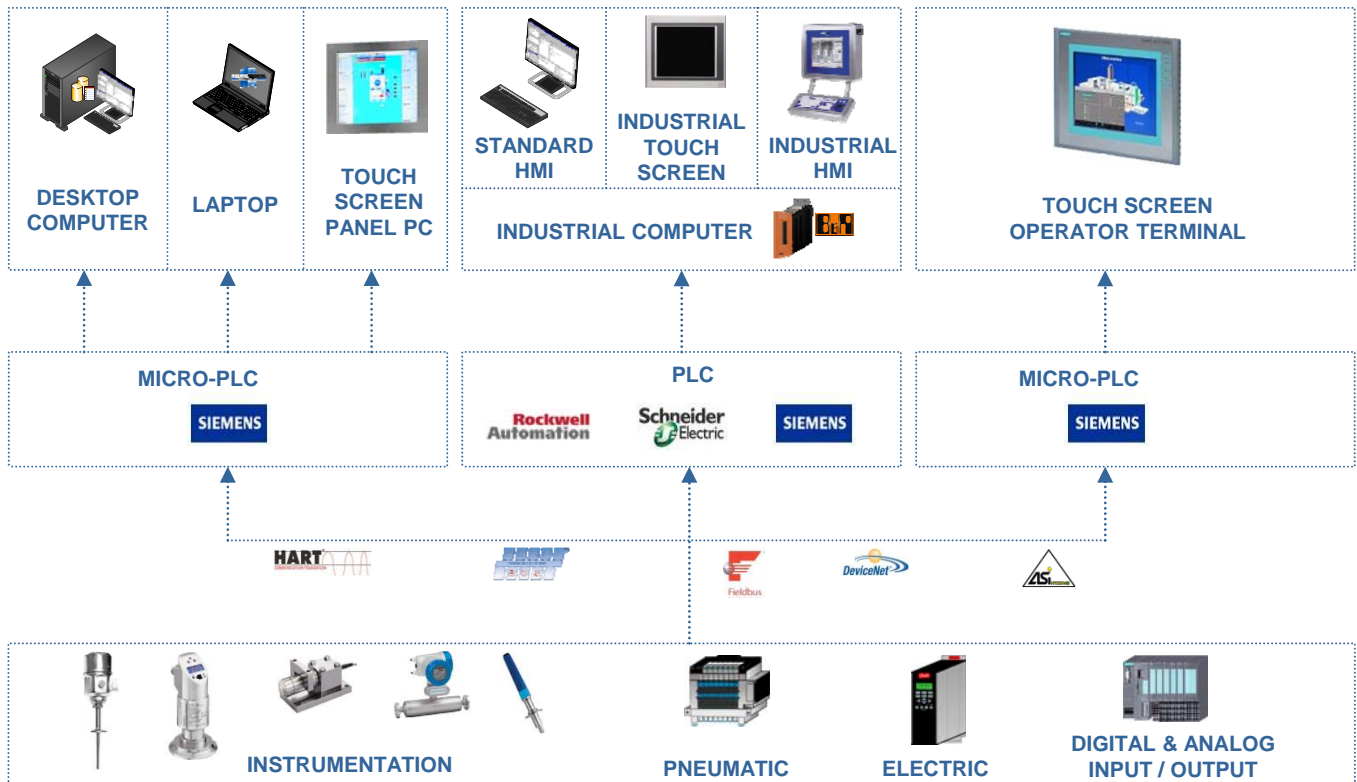
Suitable for **GMP** applications (CFR21pt11, GAMP 5, ISA S88,...), this control option is mainly used in the **Industrial Environment**. This robust and reliable system has been designed to meet the requirement of complex upstream processes

NEPTUNE™ WinCC FLEX



The NEPTUNE™ WinCC FLEX control option utilizes a **Micro PLC and Touch Screen Operator Terminal** to control all process control and data-logging functions

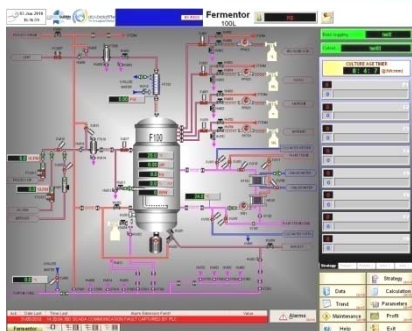
Suitable for **GLP or GMP** applications (CFR21pt11, GAMP 5), this control option is either used in the **R&D area** or the **Industrial Environment**. NEPTUNE™ WinCC FLEX is an advanced, reliable and user friendly solution



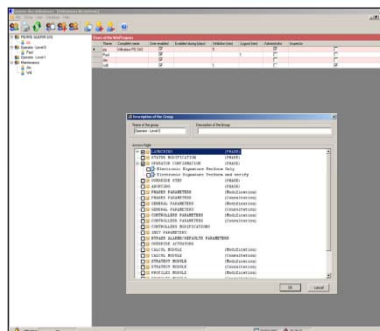
NEPTUNE™ CONTROL SUITE

FUNCTIONAL MODULES

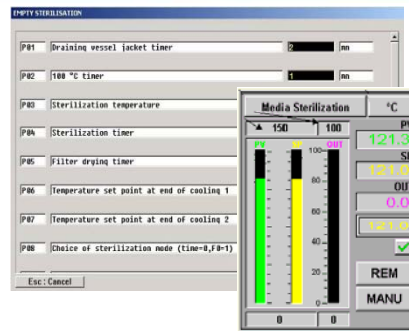
NEPTUNE™ software runs under WINDOWS operating system and offers a user friendly and intuitive interface. It has been developed to comply with the requirements of the Pharmaceutical and Biotechnology Industries such as GAMP5, 21CFR PART11, ISA S88 batch control. A wide range of functional modules are available to suit the specific needs of bioprocess application (*):



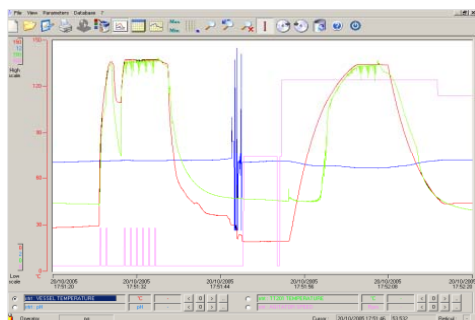
A **SYNOPTIC** overview presents all on-line measured values, actuators status, current phase, alarms



The **USER ACCESS** module allows for a customized management of the operator access while complying with the 21CFR PART11



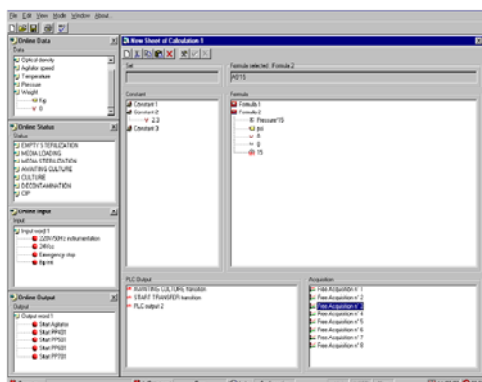
The **PARAMETER EDITING** module allows the operator for adjusting set-points, PID settings...



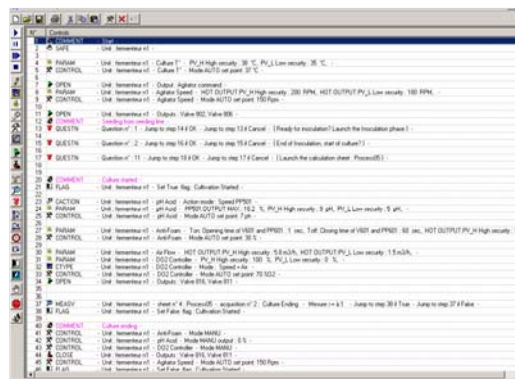
The advanced **GRAPHING & PROFILE** modules allow for data management and controlling set-points via imported or plotted data

Batch	Date	Equipment	Phase number	Phase	Action	Label	Operator
db001	20/10/2005 17:37:56	CR1	19	DATA LOGGING	STEP CHANGE	Step: DATA LOGGING	pg
db001	20/10/2005 17:37:56	CR1	19	DATA LOGGING	APPEARANCE		pg
db001	20/10/2005 17:38:46	CR1	1	EMPTY STERILISATION	RESTARTING BY OPERATOR		pg
db001	20/10/2005 17:31:42	CR1	2	MEDIA LOADING	STOP BY OPERATOR		pg
db001	20/10/2005 17:31:40	CR1	1	EMPTY STERILISATION	STOP BY OPERATOR		pg
db001	20/10/2005 17:29:54	CR1	2	MEDIA LOADING	Step	Step: LINE STERILIZATION	pg
db001	20/10/2005 17:29:54	CR1	2	MEDIA LOADING	APPEARANCE		pg
db001	20/10/2005 17:29:47	CR1	1	EMPTY STERILISATION	Step	Step: DRAINING OF V. JACKET	pg
db001	20/10/2005 17:29:47	CR1	1	EMPTY STERILISATION	APPEARANCE		pg
db001	20/10/2005 17:28:54	CR1	19	DATA LOGGING	Step	Step: DATA LOGGING	pg
db001	20/10/2005 17:28:54	CR1	19	DATA LOGGING	APPEARANCE		pg

AUDIT TRAIL module captures all actions made with the software providing a query SQL database record of a batch with customised report generation (Utilizing Crystal report tools)



The **CALCULATION** module provides a means to make automatic calculations (RQ, OUR...) in real-time. This calculated value can then be logged, graphed or implemented as a new process control variable



The **STRATEGY** module enables a process to be defined stepwise for process customization and repeatability. Typically a strategy might be used for feed control, complex gassing addition, set-point ramps or event based actions.

(*): Screen displays refer to the NEPTUNE SCADA version