



# PTP

An engineering  
consultancy  
with a flexible  
approach



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We can  
work it out



Software Development



Test & Measurement



Machine Control



Systems Integration



National Instruments



Legacy Support



Turnkey Solutions





# A simple philosophy

We work in partnership with our clients to provide an excellent service which meets their specifications and budgetary requirements

PTP was founded in 2000 by Dr Martin Saxon.

The company has grown organically and now employs a team of engineers with expertise across a wide range of areas.

Our primary skill is **engineering software development** but what sets us apart is our ability to tackle difficult or unusual problems.



## Quality standards

ISO 9001 Certified Engineering Consultancy with the highest level of commitment to quality management.



## Key skills

A highly qualified and experienced team of engineers with the ability to undertake a wide range of projects.



# Key Skills

The team at PTP has skills and experience across a wide range of areas including:

- > Software development
- > Hardware design and implementation
- > Systems integration

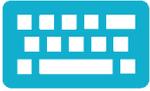
PTP is expert in delivering National Instruments solutions:

- > Leading LabVIEW and LabWindows/CVI Experts

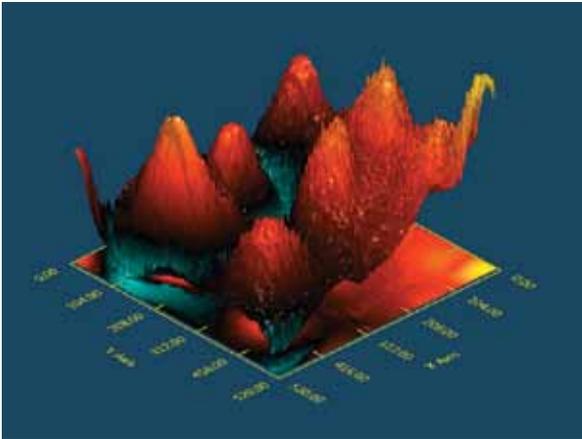


- > National Instruments Alliance Partners since 2005





# Software Development



**lonscope** has developed the Scanning Ion Conductance Microscope (SICM), a patented topographic scanning technique which produces high-resolution images without making contact with the sample.

PTP has worked closely with lonscope to develop the code required for their second generation of SICM products.

## Expertly designed, scalable and maintainable

PTP employs a highly experienced and qualified team of software engineers who can write scalable, modular code which is easy to follow and meets your specifications exactly.

Our Architects and Developers always ensure that our code is designed with longevity and flexibility in mind.

- > Write software in all major languages
- > Interface from specialist languages such as National Instruments LabVIEW to more commonly used programming languages such as C++ and C#
- > Write scalable, modular code designed to evolve with your product and business
- > Provide source code which becomes the property of the customer on project completion meaning that subsequent maintenance can be taken in house if required



# Machine Control



*Simulators are increasingly used in professional motorsports for driver training and vehicle development. The sophistication of such simulators is rapidly improving to provide a complete, realistic driving experience with visual, audio and – importantly – motion feedback to the driver.*

*PTP have been working with simulator manufacturers to develop a new motion platform controller that has the flexibility and speed of response required for this demanding application in a cost-effective format.*

## Improving throughput and maximising efficiency

PTP specialises in the provision of machine control systems requiring high precision, versatility, non-standard functions, and R&D facilities in any combination.

- > Design and implement machine control software in a range of programming languages with particular expertise in LabVIEW machine control systems
- > Integrate new functionality into existing machinery
- > Produce scalable modular machine control code which can be taken in house for future maintenance if required
- > Work to achieve the highest throughput possible thus maximising efficiency and return on investment from production machinery
- > Collaborate with customers to develop solutions for research machine control



# Systems Integration



**Huxley Bertram Engineering** approached the team to develop software for their prestigious HBE Servo-Hydraulic Powder Compaction Simulator.

This is a highly sophisticated research tool for the creation of new tablets which enables formulation scientists to accurately replicate any tablet press conditions and test if the formulation is viable.

PTP identified the cost saving implications of combining the machine's servo controller, motor controller and the data acquisition hardware. We also demonstrated the feasibility of integration.

## Modification and Integration with minimum complexity

Many companies are specialists in a particular area such as hardware design and build, software development, wiring or cabinet building but it can be a challenge finding a company who can integrate these elements to produce a complete system. PTP has undertaken many systems integration projects across a wide range of industries and we understand the complexities that can be involved.

- > Project manage systems integration projects
- > Integrate PTP software with all types of hardware with particular expertise in National Instruments hardware
- > Update and modify existing software as required to achieve integration with new and existing hardware
- > Work with our partner companies to provide a seamlessly integrated solution
- > Integrate new hardware into an existing system in order to increase throughput or productivity



# Test and Measurement



**Nujira** is the world leader in developing revolutionary energy saving solutions for the next generation of mobile handsets. Nujira's technology enables multi-mode multi-band Envelope Tracking (ET) RF Power Amplifier solutions to solve critical power efficiency complexities in wireless handsets.

PTP worked with Nujira to optimise the software used to test their leading product, the envelope tracking power supply modulators which power energy efficient 4G cellular terminals, base stations and digital broadcast transmitters.

## Bespoke FTE and ATE

A custom test and measurement solution can be designed and built to your exact specifications to ensure it performs precisely the intended test function. This can result in efficiency savings and increased throughput. A bespoke test and measurement solution need not necessarily be more expensive and may actually be cheaper if an 'off the shelf' system exceeds the specification required.

PTP has worked on a large number of testing solution projects across a wide range of industries. These include producing a customised rig for testing intelligent gas valves and creating a validation rig for board level testing of an energy monitor.

We design and build custom test solutions for R&D as well as production environments.

- > Functional test equipment
- > End of line testing
- > Automated production testing

We have worked in many different areas including:

- > Sound and vibration analysis
- > Vision and inspection systems
- > Vehicular component testing
- > Silicon performance testing
- > Electronic product testing



# National Instruments



**CK Industrial Engineers** is a leading supplier of specialist jigs and fixtures to some of the world's leading automotive manufacturers. They turned to PTP to design and implement a control and measurement system with data logging and interfacing software for their laser alignment fixture.

PTP developed a National Instruments hardware and software solution that covered the multiple disciplines demanded by the fixture.

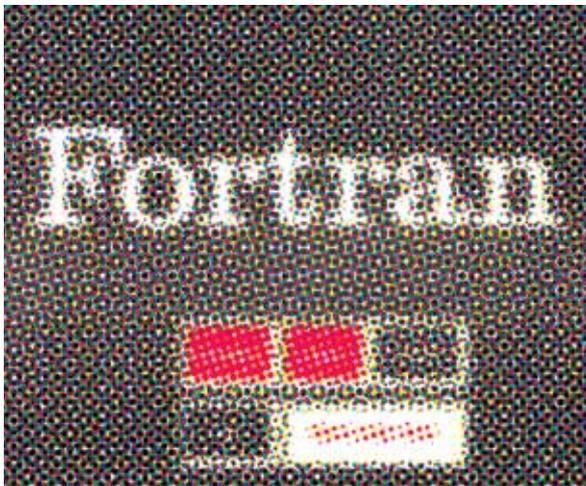
## Professionally architected National Instruments solutions

National Instruments (NI) is a major supplier of modular open hardware. Their flagship software product LabVIEW is graphical programming software ideally suited for machine control and testing solutions. PTP are experts in integrating NI hardware and software specifically using LabVIEW and LabWindows/CVI to develop innovative customer solutions.

- > Design custom software in LabVIEW and LabWindows/CVI
- > Implement systems integration solutions which include NI hardware and software
- > Provide customised training and consultation on any aspect of LabVIEW or LabWindows/CVI
- > Work with clients to provide LabVIEW and LabWindows/CVI solutions of any size, from a small software development to a multi-platform network-enabled test system
- > Produce well designed, scalable and maintainable code adopting professional software architectures and development procedures
- > Enable our customers to maintain the delivered solution with the minimum of transition effort



# Legacy Support



PTP was asked to migrate an old **FORTRAN/MS-DOS** application, developed prior to the general use of Windows, to run on a modern 64-bit Windows 7 PC. Because the old application incorporated a large quantity of code (and intellectual property), a complete rewrite was considered uneconomic. We therefore researched and identified a FORTRAN development platform suitable for creating 64-bit Windows applications and made the necessary changes to the application source code to comply with the new platform.

## Extending the lifetime of existing systems written in legacy languages

PTP has significant experience in maintaining and updating legacy systems; software written in older languages which may no longer be commonly used, and hardware which may no longer be current or supported by its original manufacturer.

Being able to work with legacy systems can provide significant cost benefits by reducing the need to replace older machinery and extending the lifespan of existing hardware and software.

PTP has worked on a number of legacy projects in recent years. We have worked on projects for customers in a wide range of older programming languages such as VB6, MS-DOS based systems, FORTRAN 77 and C.

- > Advise on the best way to maximise potential lifespan from older machinery and code
- > Solve specific problems relating to legacy code
- > Adapt legacy code where changes to hardware are required
- > Carry out system audits to assess the potential of existing legacy hardware and software



# Turnkey Solutions



**JCB** is required to test their products to ensure that they meet the acoustic emissions regulations prescribed by international standards (ISO 6395, ISO 3744).

In order to provide this, PTP designed a robust 6-channel data acquisition hardware system that, including microphones, was certified and calibrated to IEC 61672 Class 1 – the international standard for sound level meters. Custom PC software was also developed that would acquire, process and display the noise levels captured by the microphone array during testing.

## Design and Deliver: from concept to completion

PTP has significant expertise in providing our customers with turnkey solutions for their test & measurement or machine control requirements.

We have worked on a large number of projects which range from producing a customised rig for testing industrial ink printers for a leading manufacturer to producing a flame detector rig for the security industry. We have also worked closely with our partner company RailMeasurement to produce a number of products for rail corrugation analysis.

We can take an idea or initial specification and turn it into a complete, functioning solution. Every aspect of a project can be completely managed including:

- > Concept development
- > Specification design and prototyping
- > Software design and coding
- > Hardware design and build
- > Documentation and training
- > Installation and commissioning
- > Aftersales service and extended warranty support
- > Subcontractor management



# Training



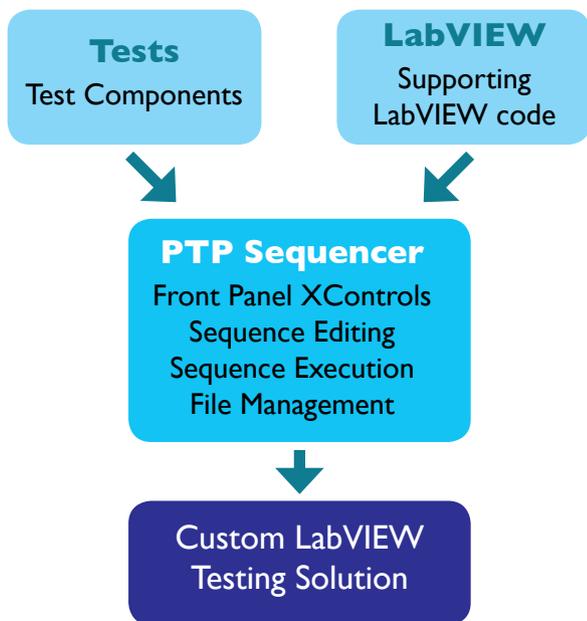
## Bespoke LabVIEW Training

National Instruments LabVIEW software is designed to be straightforward and intuitive to use but from time to time, companies or research organisations may require training on a specific LabVIEW issue. It may be that you need help using LabVIEW to solve a particular problem or that you need help from a LabVIEW expert as to how best to structure a complex piece of LabVIEW code.

- > Take your LabVIEW proficiency to the next level with a cost effective training solution
- > Design and deliver personalised training programs to address specific LabVIEW based expectations
- > Provide training courses either at PTP's Cambridge premises or at your own site
- > Provide bespoke training resources such as manuals and documentation as required



# PTP Sequencer



## The Sequencing Engine Toolkit for LabVIEW

PTP Sequencer provides software developers of all skill levels with easy-to-use tools to implement sequencing capabilities into their LabVIEW development.

- > A library of functions for building and executing sequence definitions
- > Advanced XControls for creating sophisticated User Interfaces with ease
- > Reduce your test solution design time and costs
- > Build your own custom Test Executive





# Visual Alarm Device Test Equipment



## Test Visual Alarm Devices to the mandatory EN54-23 standard

PTP has developed a range of equipment for testing Visual Alarm Devices (VAD's) for compliance with the new European EN54-23 standard.

### Research VADER

Designed for high volume testing of all types of VADs, Research VADER is ideal for use in regulatory test houses.

It has a fully automated floor-standing turntable and can test VADs up to 8kg.

### MiniVADER

The MiniVADER is a cut down version of the Research VADER and is ideal for VAD manufacturers wishing to do pre-certification testing to EN54-23.

Optionally, a manual or automated bench-top turntable can be specified. VADs of up to 3kg can be tested.

**MiniVADER** Data acquisition unit is pictured with the optional automated turntable (35x35x35cm).



# Achieving in Partnership

“Domino has built a strong reputation for quality products. The accuracy and reliability of the PTP test system has exceeded all our expectations and allows us to detect any manufacturing issues at the earliest stage ensuring that the quality of our product remains of the highest standard.”

***Domino Printing Sciences PLC***

“We have worked with PTP for many years on a wide variety of machine control projects and we have always found them to be helpful, knowledgeable, competent and reliable.”

***Huxley Bertram Engineering Ltd***

“PTP worked collaboratively with the manufacturer of our complex 9 tonne research machine to produce and integrate Machine Control software in LabVIEW. PTP worked flexibly to our needs and quickly produced a detailed proposal which, when implemented, provided a solution which exactly fulfilled our requirements. PTP's experience and professionalism in providing LabVIEW solutions was obvious and I would have no hesitation in highly recommending them.”

***M. Barrett C.Eng***

“I am sure that I speak for many when I say that the work that PTP does for Tyco is greatly appreciated and acknowledge that the support that is given to us, is also very often over and above the call of duty.”

***Tyco Safety Products***