ALPHR **W3**

ALPHR
TECHNOLOGY

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WHO WE ARE
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ALPHR **TECHNOLOGY**

www.alphrtechnology.com

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WHO WE ARE

ALPHR Technology is a team with a passion for engineering. We are dedicated to sharing our expert knowledge of automation, product design and manufacture, to create innovative, integrated solutions for our clients.

We have 30 years of global experience in providing an industry-leading range of test solutions, innovative complex assembly, portable test equipment, standard products and capturing complex data, to deliver flexible and bespoke solutions. Our support is global and our expertise runs from end-to-end.

We believe in…

Integrity
We deal with our clients, partners, suppliers and society at large, with integrity, honesty and respect.

Collaboration
We develop and foster collaborative relationships with our clients, partners and suppliers, to deliver the right technology every time.

Innovation
We use our experience and expertise to drive innovation and deliver the best outcomes for both our clients and society as a whole.

Our Mission
is to use technology to automate, innovate and integrate a better world for all.

Our Vision
is to deliver world-leading automation and innovation to our clients.

Partnership
We believe in the power of partnership. We collaborate with international and local suppliers, to ensure only the most appropriate hardware is selected for integration.

As a consequence of our close links with our supplier network, we are embedded in their R&D cycle, which means we can influence new product design and ensure new products are more likely to meet your future product requirements.

Our Contribution to Society
We are proud to contribute to society through the development of safe and efficient automation technology, that will lead to a more sustainable world.

We believe in being good neighbours and sourcing from local suppliers, wherever possible.

We are guided in all our activities by the UN Sustainable Development Goals – 17 goals to transform the world.

INDUTRADE
ALPHR Technology is wholly owned by Indutrade www.indutrade.se an international technology and business group, based in Sweden. This group contains over 200 companies from around the world. Companies in the Indutrade Group are distinguished by their high-tech offer and knowledge base and the ability to build enduring relationships with both clients and suppliers.

LOCATIONS

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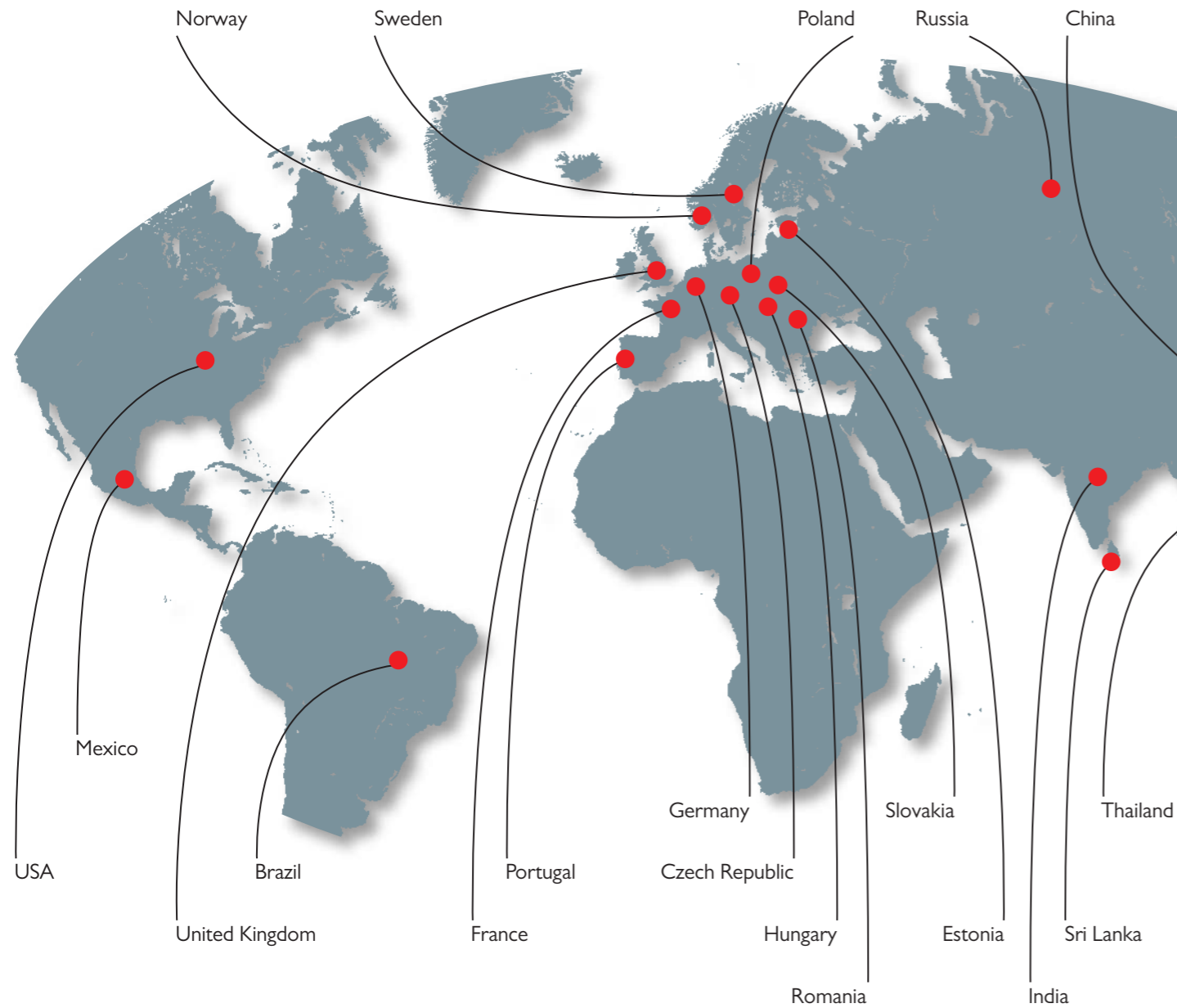+44 (0)1462 675 838
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Mexico

USA Brazil Portugal Czech Republic

United Kingdom France Germany Slovakia Thailand

Hungary Estonia Sri Lanka

Romania India

IN-HOUSE FACILITIES UK AND EUROPE

We have a team of mechanical, electrical and software engineers, working alongside our production and project managers, which means that we can offer a full range of mechanical and electrical engineering, design, machining and assembly capabilities.

This includes:

Full design capability, for both mechanical and electrical engineering

In-house machine shop

Research and Development department

Software engineering – all PC and PLC programming is carried out by our specialist team

Mechanical and electrical assembly – carried out by our certified engineers
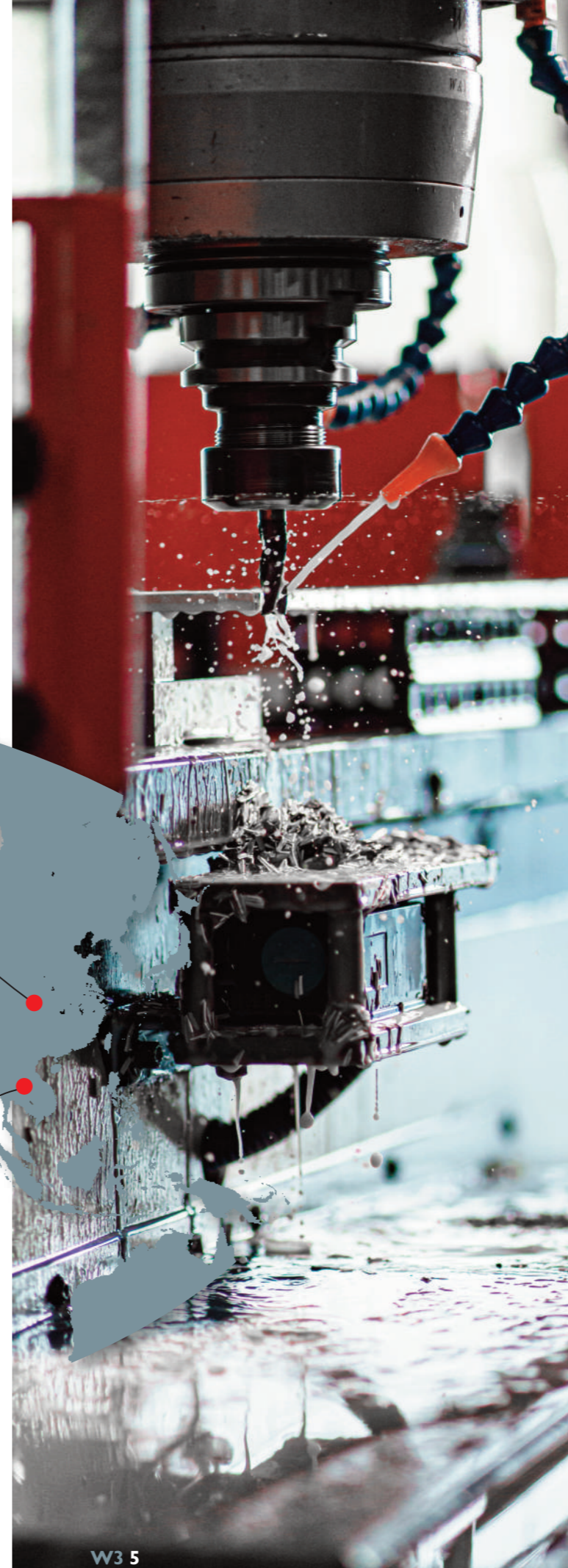
Our activities are supported by:

Service department – a dedicated service team to support ALPHR's global client base

Finance

Purchasing

Sales

AUTOMATE

We are passionate about automation. We understand the advantages of automation and the use of robotics - how these can transform the product assembly and testing of any manufacturing process; whether it is improving a manual process; the use of robotics and cobotics; automating part or all of a process; and transforming manufacture through the innovative use of automation.

Our experience and expertise have been developed over decades, so we have a portfolio of successful, tried-and-tested products to fulfil our clients' requirements. We also have the ability to take our knowledge and apply it to emerging technologies and new manufacturing processes that require bespoke automation solutions.

We can be your trusted partner in testing and automating the manufacture of what you do. The benefits of automation are improvements in quality, speed and accuracy, improved health and safety for your team, increased productivity and value for money – all of which contribute to greater competitiveness for your business, no matter what you make.

WHAT WE DO

Introducing Automation into Manufacturing
ALPHR understand the perception of risk in introducing automation. We collaborate to mitigate these fears by working closely with each client to offer flexible and maintainable solutions through developing a mutual understanding of:
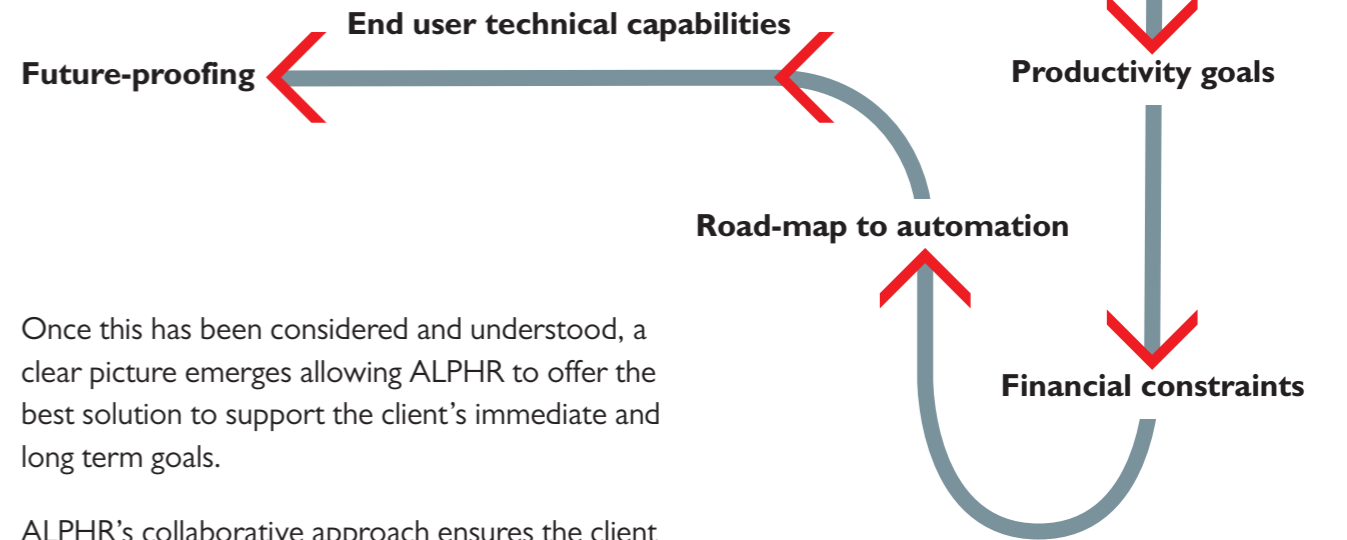
Once this has been considered and understood, a clear picture emerges allowing ALPHR to offer the best solution to support the client's immediate and long term goals.

ALPHR's collaborative approach ensures the client can fully understand the benefits of automation, which can include:

Automation requirements

Current processes

Existing issues

End user technical capabilities

Future-proofing

Productivity goals

Road-map to automation

Financial constraints

Manufacturing cost benefits

Improved workplace safety

Improved working environment for employees

Environmental benefits including reduced waste

Reduced manufacturing footprint

Improved precision

Improved repeatability

Increased output

Improved quality

Complex Assembly

We know that the automation of any assembly process requires understanding of the complexities involved, repeatability and above all, precision. Our experience ranges across the development and deployment of a wide variety of complex manual, semi-automated and fully automated assembly solutions, including the use of robotics.

Standard Products

We are proud to offer standard products that embody the best of our expertise and experience. Standard products not only help reduce risk by giving access to proven technology, but offer the additional benefits of repeatability and reduced development.

ALPHR's comprehensive range of modular stations provide tried-and-tested automation solutions, designed for simplified integration, operation and maintenance.

Our modular design methodology allows for a simplified pricing structure, whilst offering the flexibility to incorporate additional functionality, including robots, screwdriver systems and vision systems.

Machines are designed and manufactured with a view to a client being able to add future product variants to the machine. The machine and associated fixturing, are designed for a quick-change process with embedded checking, to ensure that the correct fixtures are in place.

Test Machines

We have 30 years of global experience in the development and deployment of industry-leading test solutions and can offer much of this functionality in the form of portable test equipment for use on location.

ALPHR can build machines capable of testing a wide variety of functions and characteristics throughout a production process, to ensure the consistent quality of final products. Whatever needs to be tested and however it needs to be tested, we can help.

SUPPORT ALWAYS ON HAND
Using the dedicated support contact system, support requests are acknowledged within two working hours

FLEXIBLE, EFFICIENT SUPPORT OPTIONS
Via phone, video conference or remote dial-in, ensuring production is kept running wherever possible

GUARANTEED RESPONSE
Added confidence that a support engineer will be allocated to you, full-time within one working day from when a request is acknowledged

REPORTING
Detailed report provided after completion

SUPPORT MONITORING
Support Tickets monitored, reported and agreed with the client following any work

SUPPORT TICKETS
Support Tickets provide the confidence that your support needs are always covered

EXPERIENCED TEAM
Access to an experienced team of system, software, support and design engineers

PARTS AVAILABILITY
If an issue is diagnosed that requires spare parts, these can be quoted for, ordered and despatched by the support team immediately, providing the quickest possible fault resolution

'PEACE OF MIND' SUPPORT
The guarantee that support is available when needed

Support

We know that just as every automation cell we design and deliver is unique, so the support we offer needs to be tailored. We believe that collaboration is the key to providing the very best support. Using SWARM methodology, we aim to use our collective expertise to resolve issues as quickly and efficiently as possible. Our target is to resolve or agree the steps to resolution for 90% of enquiries during the initial support enquiry.

ALPHR has developed a building block approach to the support we offer. This enables our clients to choose an Enhanced Support Package and then add support blocks to suit their individual business requirements.

PREMIUM SUPPORT

Initial response to support enquiry within 1 business day

Action plan agreed with client within 2 business days

ENHANCED SUPPORT

Initial response to support enquiry within 1 business day

Action plan agreed with client within 5 business days
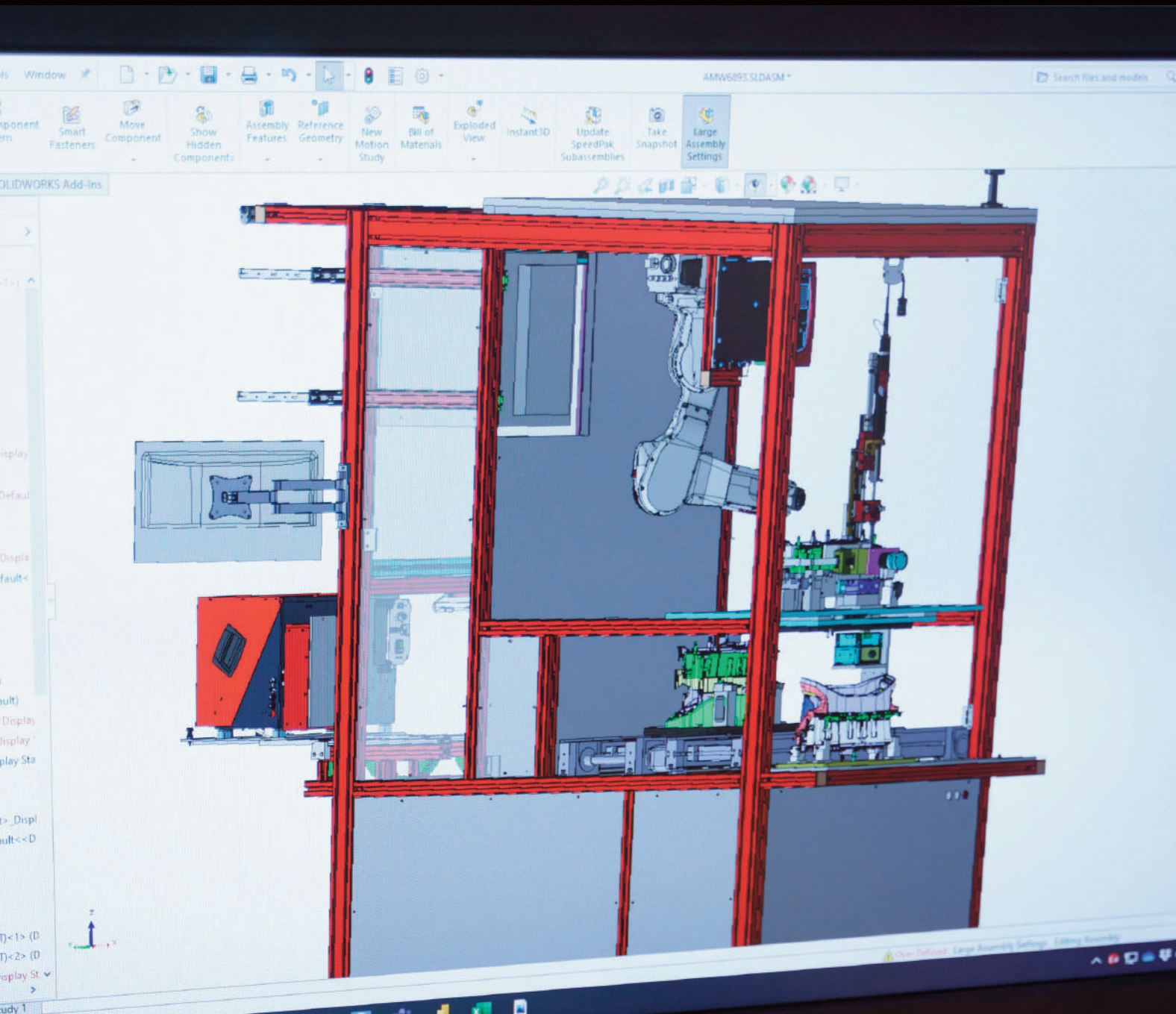
INNOVATE

We are continually developing links with universities, the MTC and industry bodies to ensure our place at the cutting edge of automation technology. With our experience and expertise, ALPHR is also committed to understanding emerging technologies and evaluating their use in the automation of complex manufacturing processes.

ALPHR has been an acknowledged innovator in automation technology for over 30 years. We led the way in making PC-based automation technology available to the market. Our technology is built on our own proprietary software, which offers our clients flexibility and reliability.

We offer our clients a full training Certification Programme for technicians. The programme is divided into hardware and software modules and is fully supported by ALPHR's engineers.

An example of ALPHR's innovation is in the field of 3D printing/additive manufacturing – we offer the provision of wear parts utilising 3D printing technologies to provide clients faster and more flexible turnaround times. Our philosophy is to provide more geometrically complex fixturing utilising the advantages offered by this technology .

With our software and design capabilities, supporting our dedicated Research and Development team, we continually innovate to find the best solutions.

Emerging Technologies

We believe that emerging technologies such as laser, laser diode, LiDAR, smart factory, augmented reality and 3D printing, offer real gains to our clients, when technology into a machines for the production environment.

When it comes to fully autonomous vehicles/automated guided vehicles (AGVs) and cobots, ALPHR has a relationship with key original equipment manufacturers who provide this industry leading technology. This enables us to integrate these Industry 4.0 enablers into our control systems.

Industry 4.0

Industry 4.0 refers to the combination of innovations in digital technologies, such as robotics and artificial intelligence, sophisticated sensors, cloud computing, the Internet of Things (IoT), compliance with smartphones and many other applications.

We believe that by aligning automation with data collection and exchange procedures, the adoption of Industry 4.0 concepts can undoubtedly provide our clients with greater efficiency in their processes.

ALPHR was an early adopter of the use of PCs and sensors within our manufacturing cells. We have used technology as an enabler to monitor our machine health and performance, and to remotely connect to implement upgrades and fixes.

Key features of Industry 4.0

ALPHR has considerable experience and expertise in the key building blocks of Industry 4.0:

Robotics – design, integration and programming of robotic solutions for a variety of manufacturing processes. Our solutions include cartesian systems, SCARA robots, 6-axis robots and cobots with production lines featuring multiple robot cells interacting and interconnected.

Machine learning – through capturing data over many years of machine operation ALPHR has developed an understanding of key performance indicators for many different automation cells. We are working to develop algorithms to enable cells to self-diagnose potential issues to allow predictive and proactive maintenance reducing unplanned machine downtime to near zero.

Internet of Things/Industrial Internet of Things – by utilising networks, sensors, instruments, and other devices to measure and capture data we have provided clients with real, valuable production information.

Industry 4.0 Design Principles

There are four key design principles identified as integral to Industry 4.0. These principles are also central to the ALPHR philosophy of automation cell design and manufacture.

Interconnection

The ability of machines, devices, sensors, and people to connect and communicate with each other via the Internet of Things.
This inter-connectivity allows operators to collect immense amounts of data and information from all points in the manufacturing process, enabling clients to identify key areas that can benefit from improvement to increase functionality.

Information transparency

Industry 4.0 technology provides operators with comprehensive information to make decisions in a timely and informed manner.

Decentralised decisions

The ability of systems to make decisions on their own (or with a human in the loop) and to perform their tasks as autonomously as possible. Only in the case of exceptions, interference, or conflicting goals, are tasks delegated to a higher level.

Technical assistance

Systems to assist in decision-making and problem-solving, with the ability to help humans with difficult or unsafe tasks.

The Smart Factory

The smart factory represents a leap forward from more traditional automation, embracing Industry 4.0, to achieve a fully connected and flexible system - one that can use a constant stream of data from connected operations and production systems to learn and adapt to new demands.

ALPHR fully understands the concept of the smart factory and the value it will deliver to our clients. Our automation cells are Industry 4.0 enabled, to allow clients to generate, capture, and manipulate data, to create management information in near real-time.

Our automation cells are tailored to fit each client's unique requirements. Our experience enables us to implement best practice and to deliver the most appropriate technology into all our machines, while also understanding manufacturing processes beyond the individual cell.

We have engineers with a strong understanding of simulation and the digital twin. We work collaboratively to generate a solution that enables clients to utilise this technology to reduce risk, maximise investment, and maximise efficiency.

INTEGRATE

Over the years, we have developed our skills to integrate automation products into complex assembly and manufacturing environments.

Appropriate hardware to be integrated into any machine or production line is critically important to the performance of the equipment to be supplied. ALPHR work with a variety of hardware suppliers to specify the most appropriate equipment for the task at hand to ensure the client's brief and the project specification are met.

Hardware selection is generally specified by the following:

Client Led
If the client is successfully carrying out the same function using specific items of hardware that they both understand and can maintain, ALPHR will investigate this as being suitable for integration into the machine/line in the first instance.

A client may have a great working relationship with a number of hardware suppliers, who are counted as preferred suppliers and these will generally be listed in the client's request for quotation.

Experience Led
Over the last 30 years, ALPHR has gained a wealth of experience in integrating third party hardware into automation cells and production lines. Drawing on this experience, ALPHR will assess a client's requirements and collaborate to deliver a solution that is efficient, repeatable and reliable.

Once established, the list of hardware is reviewed and the most suitable selected for incorporation.

Innovation Led
If a client's requirement calls for a process new to ALPHR, the requirement capture team will discuss this with our in-house Research and Development department. They will then establish the hardware required, potential suppliers are sourced and if required, trials are carried out to verify the hardware recommended meets the requirements.

We have considerable experience in integrating the following into a manufacturing environment:

Robotics
Cartesian
SCARA
6-axis
Collaborative

Vision systems
Part presence
Measurement
Gauging
OCR (optical character recognition)

Insertion systems
Bushes
Cold compression limiters
Hot compression limiters
PCB's
O-rings
Captive screws

Dispensing systems
Sealants
Cyanoacrylate adhesives
UV curing adhesives
2-part epoxy adhesives
Thermal gels
Lubricating grease

Screwdriver systems
Manual screwdriver systems
Manual screwdriver systems with automatic screw feeding
Automatic screwdriver systems on XYZ cartesian robots
SCARA robots and 6-axis robots

Welding
Laser
Ultrasonic
Micro-resistance
Infrared

Electrical testing
Voltage
Current
Pull-in
Earth continuity
Impedance
Earth leakage
Polarity

Communications
RS232
RS485
CAN
LIN
USB
Ethernet
LVDS (amongst others)

Our expertise enables us to truly understand the manufacturing process and through the collaborative way we work with our clients, provide the right technology, designed to deliver results that exceed expectations.

No Faults Forward
Our aim is to make the manufacturing process as robust as possible and so we rigorously employ a 'No Faults Forward' methodology to each and every production line we manufacture.

Whether we are designing a machine for a simple assembly process, or undertaking a project that incorporates complex assembly and test techniques, our aim is to make sure each step in the sequence is successfully carried out prior to the next step being allowed to be undertaken.

'No Faults Forward' saves the client time and money by catching faults at the point they occur.

Whether the manufacturing and testing is carried out on relatively simple individual stations, or on a complex multi-station rotary or palletised line; by tracking the product through the complete manufacturing and test process, our clients can be assured that only products meeting all functional and compliance requirements, enter the supply chain.

Traceability
Traceability is a powerful tool in the manufacturing process. Through the use of barcodes, 2D data matrixes and RFID tags a company has access to a wide variety of data, such as:

Who/what/where/when of the manufacturing process

Assembly and test data

Component origin

Cycle time

Technology has allowed robust traceability systems to be developed offering potential cost savings in the following:

Warranty claims

Product recall

Quality

Efficiency

Product upgrades

All data relating to a products serial number can be uploaded to a client's manufacturing system. This can in turn be used for the following purposes:
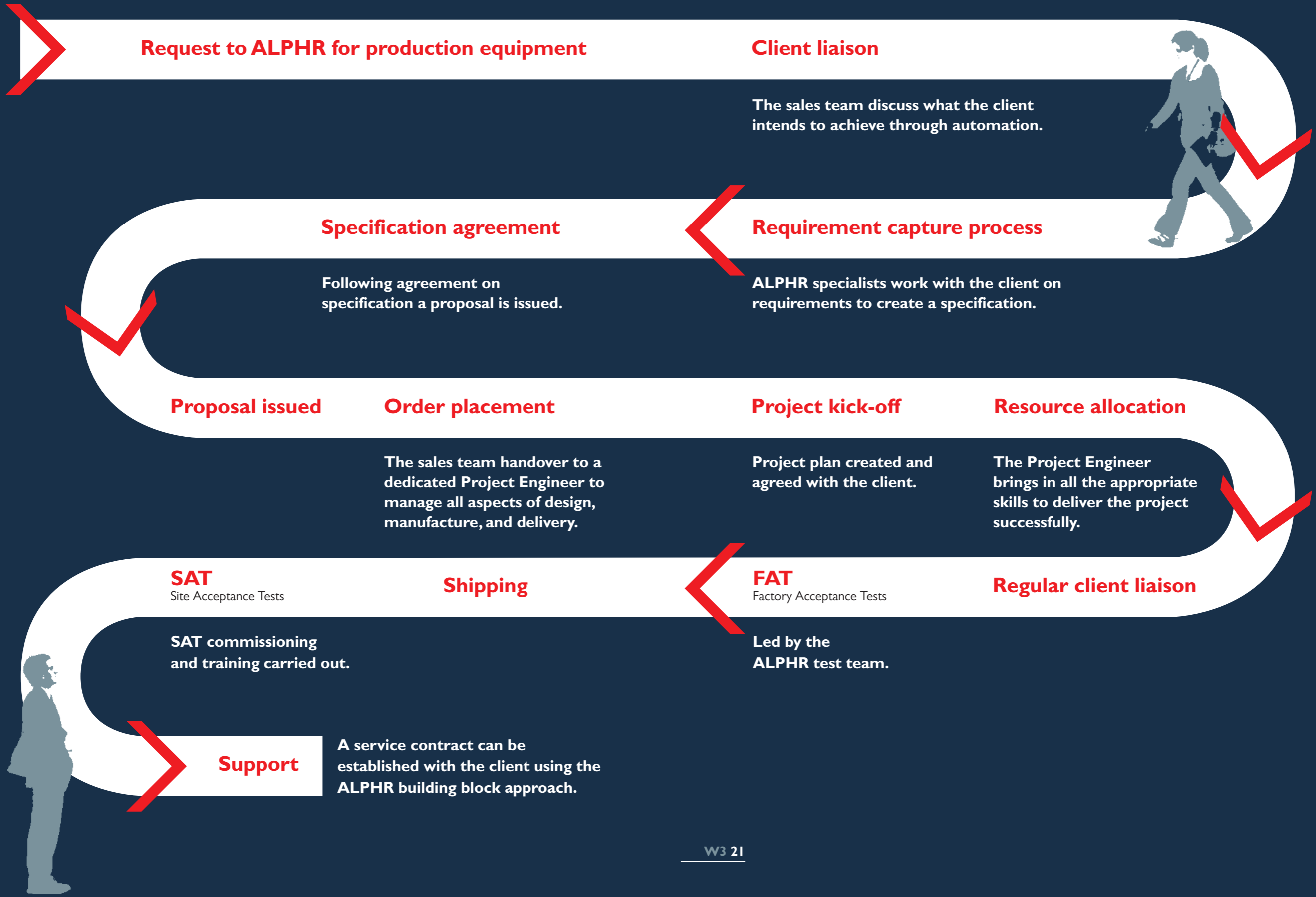
Shipping
Stock control (finished goods)

Stock control (components)

WAYS OF WORKING

The ALPHR project approach
A step-by-step guide to the way in which we work:

Request to ALPHR for production equipment

Client liaison

The sales team discuss what the client intends to achieve through automation.

Specification agreement

Requirement capture process

Following agreement on specification a proposal is issued.

ALPHR specialists work with the client on requirements to create a specification.

Proposal issued

Order placement

Project kick-off

Resource allocation

The sales team handover to a dedicated Project Engineer to manage all aspects of design, manufacture, and delivery.

Project plan created and agreed with the client.

The Project Engineer brings in all the appropriate skills to deliver the project successfully.

SAT
Site Acceptance Tests

Shipping

FAT
Factory Acceptance Tests

Regular client liaison

SAT commissioning and training carried out.

Led by the ALPHR test team.

Support

A service contract can be established with the client using the ALPHR building block approach.

LAST WORD

We know that technology enables –
that automation, robots, cobots and
software can be integrated seamlessly
into the production process – to make
a better world for all.

ALPHR **W3**

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